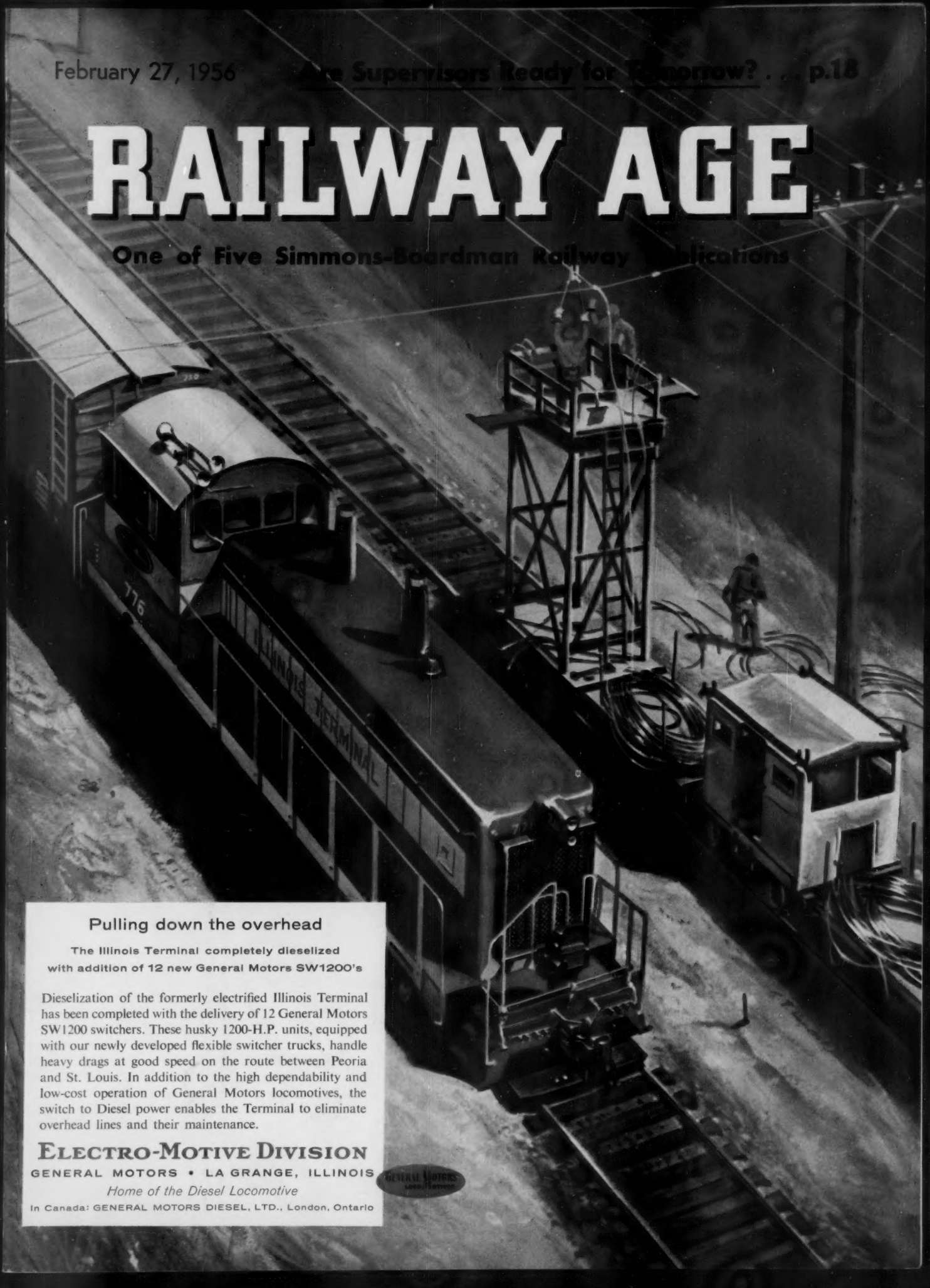
February 27, 1956

Are Supervisors Ready for Tomorrow? . . . p.18

RAILWAY AGE

One of Five Simmons-Boardman Railway Publications



Pulling down the overhead

The Illinois Terminal completely dieselized with addition of 12 new General Motors SW1200's

Dieselization of the formerly electrified Illinois Terminal has been completed with the delivery of 12 General Motors SW1200 switchers. These husky 1200-H.P. units, equipped with our newly developed flexible switcher trucks, handle heavy drags at good speed on the route between Peoria and St. Louis. In addition to the high dependability and low-cost operation of General Motors locomotives, the switch to Diesel power enables the Terminal to eliminate overhead lines and their maintenance.

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If your piggy-back profits are in the piggy-bank class

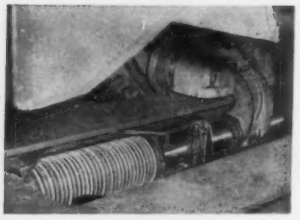
Take a look at new "Guided Loading"

You load faster

One man—1½ minutes, instead of 4 men —6 minutes per trailer.

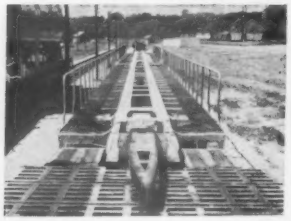
You lock safer

Four turns of a crank and heavy-duty shock-absorbing clamps secure trailer. No jacks, chains or complicated tie-downs.



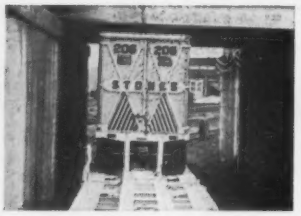
You save damage

Fastening clamps are rubber-snubbed; lading is cushioned by trailer springs.



You save weight

Piggy-Back, Inc. cars weigh at least 33% less than conventional trailer-carrying flat cars.



You gain clearance

The roof of the average trailer rides about 8 inches lower on Piggy-Back, Inc. cars.

You save money

. . . in three ways: (1) equipment cost: (2) terminal costs; (3) operation and maintenance costs.

850 of these AAR and ICC-approved cars have already been adopted by 4 major railroads. 300 will be in service by late summer.

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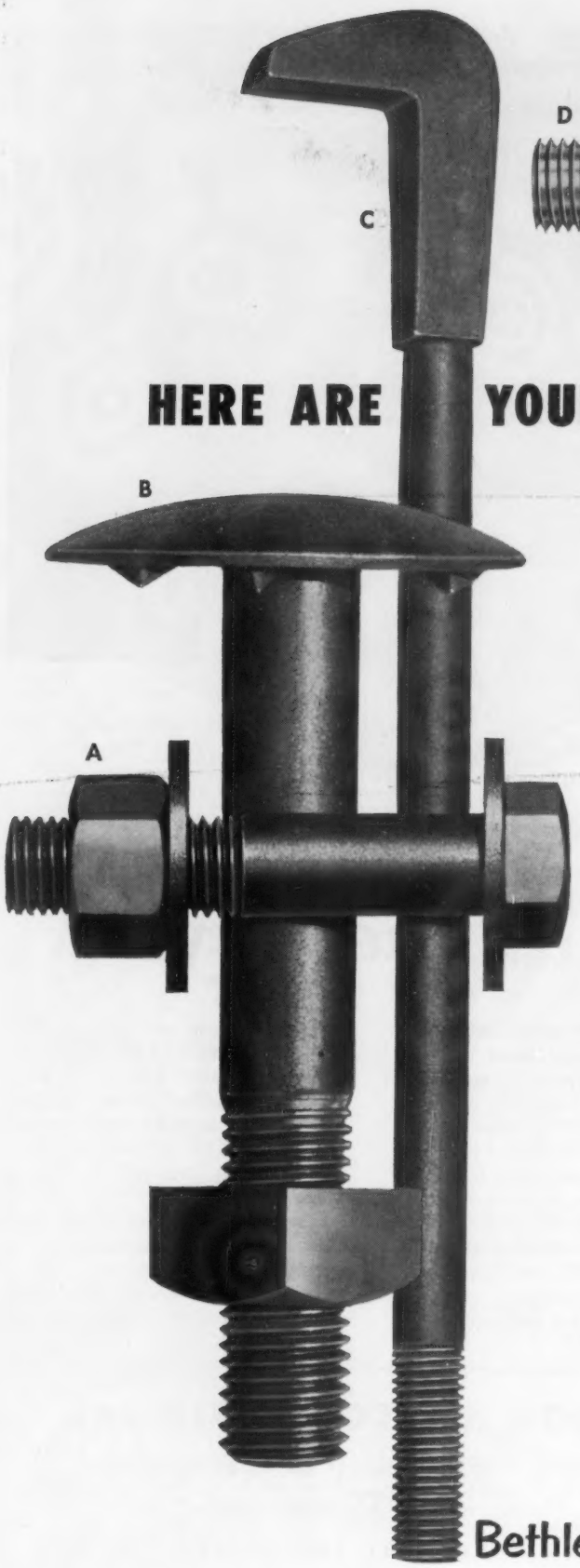

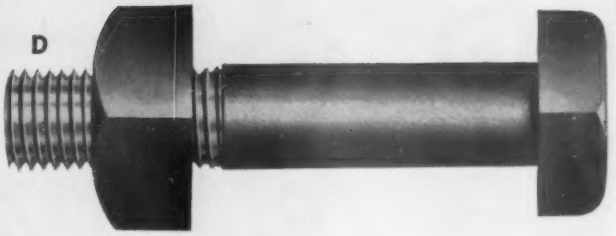

HERE ARE YOUR BOLTS FOR BRIDGE CONSTRUCTION

If you're planning bridge construction during coming months, be sure to look into the various bolts shown here. They are all products of Bethlehem's fasteners plant at Lebanon, Pa. They are well designed and well made, and have the strength to provide plenty of holding power.

A HIGH-STRENGTH BOLT. This carbon steel bolt is ideal for new construction, or for repair, because it provides a joint which is unusually resistant to vibration. Heat-treated. Used with two hardened washers, to join structural members. Nut is driven up with pneumatic impact wrench.

B SAFETY TIMBER BOLT. Lugs under the head prevent bolt from turning when tightened. Spiral ribs under head retard water seepage. Head lies close to timber. No wrench square to cause obstruction.

C TIE BOLT. Specially designed to anchor wood ties. Bolt is run through tie in inverted position, the hook head grasping flange of structural steel securely. Nut is applied from top.

D MACHINE BOLT. Comes in a wide variety of types, and full size range, to meet virtually every construction requirement for a standard bolt.

In addition to the items shown here, Bethlehem produces many other types of construction fasteners. For additional information, please get in touch with the nearest Bethlehem sales office.

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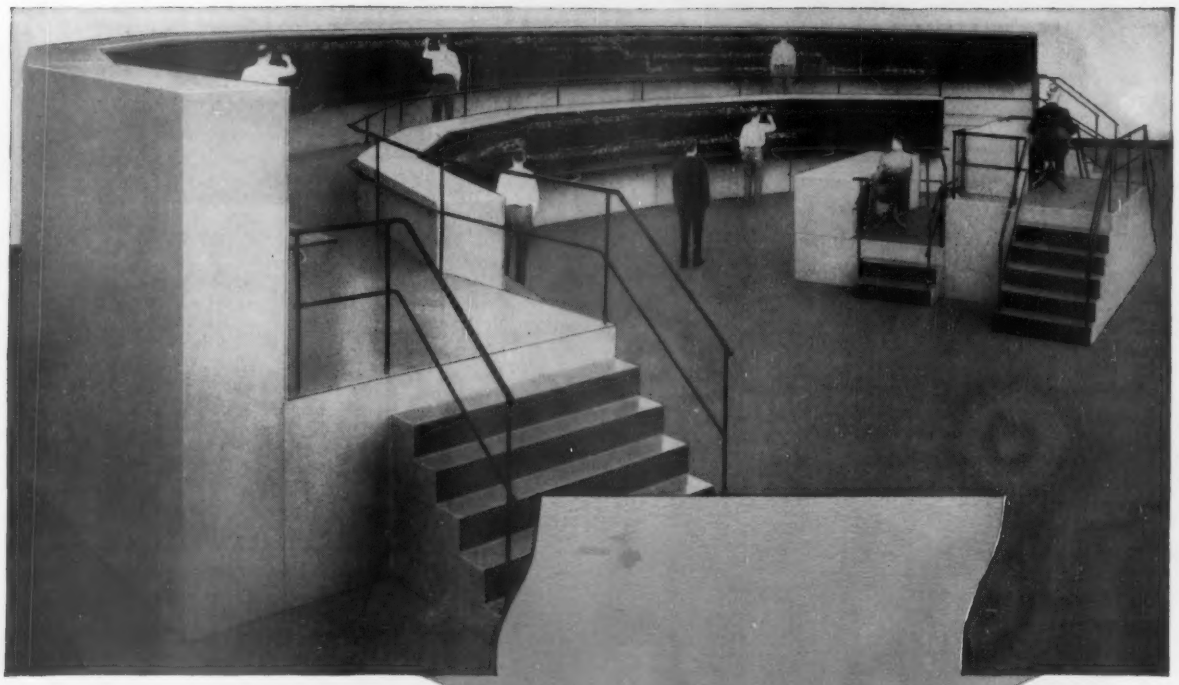

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If your road has only spotty installations, you are getting only spotty benefits. Why not start a program to install C.T.C. *all the way?*

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DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

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Workbook of the Railways

Vol. 140, No. 9
February 27, 1956

CONTENTS and

Week at a Glance

C&NW's new boss is Ben W. Heineman, who will resign from the Minneapolis & St. Louis, where he has been a director and chairman of the executive committee, to become the North Western's chairman and chief executive officer. A successor to Paul E. Feucht, C&NW president, had not been selected as this issue went to press. . . . **p. 7**

Optimism about long-range prospects for the transportation industry was the keynote of the recent annual meeting in Chicago of the Transportation Association of America. There was plenty of disagreement on details, but none at all on what the future has in store for the industry as a whole. . . . **p. 8**

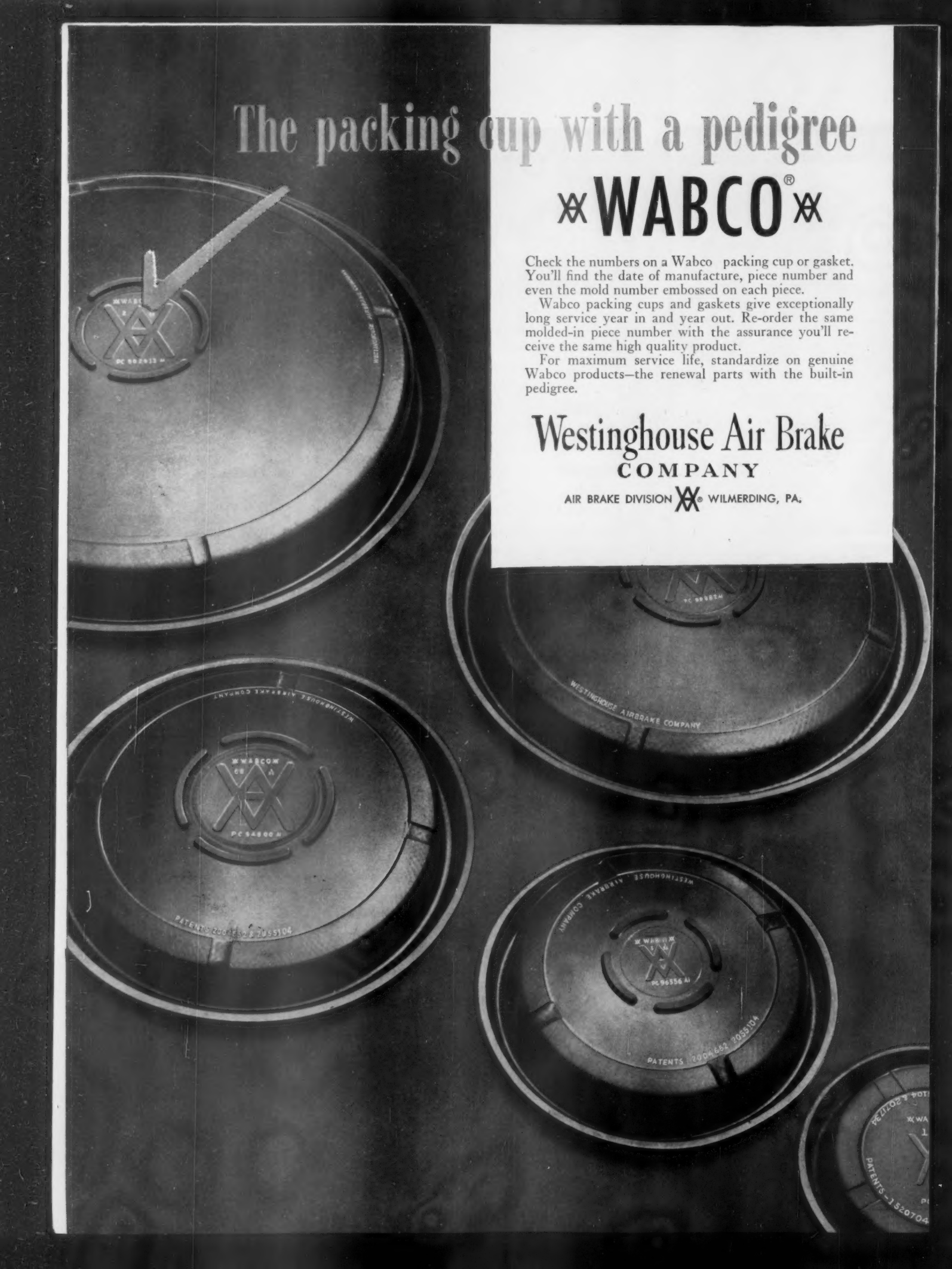
The 7% freight increase is now scheduled to become effective March 7. Postponement from the original effective date of February 27 was arranged last week at the opening of the final day of oral argument in the case. The 11-day postponement, requested by the ICC, was agreed to by the railroads and, not at all surprisingly, by the shippers. . . . **p. 12**

FORUM: Railroads—retail or mass-production? There are many detailed services on the railroads that are not remunerative. The more they are eliminated—either by allowing them to be performed by other agencies of transportation or by applying modern methods to the railroads' performance—the more likely are the railroads to please their customers and attract new ones. . . . **p. 17**

How will today's supervisors do tomorrow? The first article in a *Railway Age* series on the general theme—the *better* supervisors get promoted. Here the experience of the Canadian National with its "Performance Appraisals" is outlined—from the viewpoint of both the management and the men appraised. . . . **p. 18**

Here's how to reclaim old ballast as they do it on the Delaware & Hudson, where over 1,000 carloads were renovated last year at a cost of 48 cents a ton. . . . **p. 22**

Road switcher power goes up in Alco's new DL-701 model,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Check the numbers on a Wabco packing cup or gasket. You'll find the date of manufacture, piece number and even the mold number embossed on each piece.
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Current Statistics

Operating revenues, twelve months	
1955	$10,106,398,133
1954	9,370,825,498
Operating expenses, twelve months	
1955	$ 7,646,291,405
1954	7,384,499,680
Taxes, twelve months	
1955	$ 1,080,504,965
1954	861,281,657
Net railway operating income, twelve months	
1955	$ 1,128,115,275
1954	874,017,894
Net income, estimated, twelve months	
1955	$ 917,000,000
1954	677,000,000
Average price 20 railroad stocks	
February 20, 1956	97.87
February 21, 1955	90.25
Carloadings revenue freight	
Six weeks, 1956	4,078,090
Six weeks, 1955	3,779,219
Average daily freight car surplus	
Wk. ended Feb. 11, 1956	5,194
Wk. ended Feb. 12, 1955	47,998
Average daily freight car shortage	
Wk. ended Feb. 11, 1956	3,009
Wk. ended Feb. 12, 1955	672
Freight cars on order	
February 1, 1956	144,946
February 1, 1955	18,395
Freight cars delivered	
One month, 1956	4,199
One months, 1955	2,008
Average number of railroad employees	
Mid-January 1956	1,047,561
Mid-January 1955	1,009,402

RAILWAY AGE IS A MEMBER OF ASSOCIATED BUSINESS PUBLICATIONS (A.B.P.) AND AUDIT BUREAU OF CIRCULATION (A. B. C.) AND IS INDEXED BY THE INDUSTRIAL ARTS INDEX, THE ENGINEERING INDEX SERVICE AND THE PUBLIC AFFAIRS INFORMATION SERVICE. RAILWAY AGE, ESTABLISHED IN 1856, INCORPORATES THE RAILWAY REVIEW, THE RAILROAD GAZETTE, AND THE RAILWAY AGE GAZETTE. NAME REGISTERED IN U. S. PATENT OFFICE AND TRADE MARK OFFICE IN CANADA.

Departments

Current Publications	37
Financial	15
Forum	17
Organizations	34
Questions and Answers	14
Railway Market	9
Railway Officers	36

Week at a Glance CONTINUED

which has a V-type 12-cylinder engine rated at 1,800 hp. Many design changes distinguish this diesel engine from its predecessor, and electrical controls have been simplified.

. . . p. 24

One machine for nine interlockings — the largest project of its kind to date—is cutting manpower requirements for the New Haven from 46 positions to 12. . . . p. 26

Who makes up passenger losses? It is not always true, argues Professor Parks of Harvard Business School, that half of such losses can be passed on to the federal treasury. . . . p. 28

Rebuilding cuts upkeep and improves decor of Southern Pacific triple-unit kitchen-diner-lounge cars in service since 1941. . . . p. 33

BRIEFS

Crackdown is under way on failures to file locomotive inspection reports with the ICC. For the first time in more than 25 years, a railroad has been fined for that violation of commission regulations. The fine, $5,100 and costs, was imposed on the New York Central in a case based on information furnished by the director of locomotive inspection.

Nearly 18 billion dollars was the 1955 gross of eight carrier groups regulated by the ICC. That's the estimate of the commission's Bureau of Transport Economics and Statistics. About 58% of the total, or $10.5 billion, went to railroads. Truckers got $5.4 billion, while totals for other groups ranged from $672 million for the oil pipe lines to $50 million for electric railways. Freight forwarder revenues were not included.

Prescription of power-brake rules for passenger and freight trains is proposed in a labor-union petition which the ICC recently docketed for consideration. The docket number is 31938. The petition, filed jointly by the Brotherhood of Locomotive Firemen & Enginemen and Brotherhood of Railroad Trainmen, alleges that injuries to employees have increased because brake inspection and maintenance work has failed to keep pace with improvements in other train equipment and the increasing length of trains.

PANHANDLE AND SANTA FE REPOWER WITH CAT* D397

THIS railcar, in daily round-trip service between Shattuck, Oklahoma, and Spearman, Texas, has a new lease on life, since it was repowered with a Cat D397 Railroad Engine. The Panhandle and Santa Fe, a subsidiary of the Santa Fe, dieselized the car in 1953, replacing a gasoline engine.

Many other roads operating this type of equipment have switched from gasoline to Cat Diesel power with two important results:

1. Lower *operating* costs. In some cases fuel costs have dropped over 50%.
2. Lower *maintenance* costs. Cat Diesels give thousands of hours of economical performance with only routine maintenance.

Now Caterpillar four-cycle Railroad Engines are still more efficient. Consistent with Caterpillar's policy of continuous product improvement, the entire line has been made even better and several new engines and electric sets have been added.

Your nearby Caterpillar Dealer can show you the latest Cat power packages available for on and off track use. He'll show you the advantages of repowering with the exact Caterpillar model for your needs—Cat Diesels run up to 520 HP and Electric Sets up to 315 KW.

And remember when you are ordering new equipment, leading manufacturers of locomotives and equipment will furnish Cat Engines as part of their packages.

Caterpillar Tractor Co., Peoria, Illinois, U.S.A.

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MODERN HEAVY-DUTY RAILROAD POWER

RAILWAY AGE
Workbook of the Railways

Heineman New Boss of C&NW

Will resign from Minneapolis & St. Louis — Heineman as C&NW chairman and chief executive officer will push program to end what he calls "demoralized condition" — Feucht will resign as president

A new future begins taking shape for the Chicago & North Western this week as the road's board tackles the job of making room for Ben W. Heineman.

The board meets Friday. Top item on the agenda will be selection of a slate of directors to submit to C&NW shareholders May 15. Mr. Heineman and his associates have already sewed up five of the 17 spots.

An agreement clearing the way into the C&NW for Mr. Heineman and ending the possibility of a proxy fight was announced by the road's board last week. Here's how the picture shapes up:

(1) Paul E. Feucht, president and chief executive officer of the C&NW, will resign. Mr. Feucht is presently recovering from a recent heart attack.

(2) Mr. Heineman will become board chairman and chief executive officer.

(3) Entry into the North Western picture will put an end to Mr. Heineman's role as board member and chairman of the executive committee of the Minneapolis & St. Louis, from which he told *Railway Age* last week, he will resign.

(4) Likely successor to Mr. Feucht as C&NW president is Clyde J. Fitzpatrick, 47, operating vice-president of the Illinois Central.

(5) A Heineman-sponsored program for the North Western, designed to "produce substantial earnings for both the preferred and common stocks," will get under way.

(6) Studies on possible consolidation of the C&NW and the Milwaukee will continue, although Mr. Heineman has said he does not think such a move should be made while the North Western is in a "rundown" condition.

Friendly Accord—These latest developments came into focus last week after the C&NW board on February 21 "invited" Mr. Heineman and four of his associates to become members. Barring possible resignation of present directors before the May 15 annual meeting, the change will occur at the meeting.

Agreement on admission of the Heineman group to the C&NW board followed meetings between a special committee of the board and Mr. Heineman. The meetings, which both sides described as "friendly," resulted from a letter Mr. Heineman sent to the railroad January 30 (*Railway Age*, February 13, page 14).

In the letter Mr. Heineman disclosed that he and his associates control 465,000 voting shares of C&NW stock, and were acquiring another 100,000 shares, the total amounting to one-third of outstanding C&NW voting shares.

The North Western, at present, has an 18-man board, elected for staggered three-year terms. On that basis, six vacancies occur annually. Present plan is to reduce the board to 17, with the five places this year going to the Heineman interests.

This arrangement is complicated, however, by the fact that one board member whose term expires this year is Eugene A. Schmidt, Jr., treasurer of Metropolitan Life Insurance Company. That firm holds a big stake in C&NW stock and bonds, and it's assumed Mr. Schmidt will continue as a director.

As a result, the C&NW board faces substantially more changes this year than might occur with the usual expiration of only six terms.

Other board members whose terms are slated to expire May 15 are: R. L. Williams, former president and chairman of the road; Mr. Feucht; L. E. Hurtz, chairman of Fairmont Foods Company, Omaha; George A. Neal, president of the Iowa Public Service Company; and C. O. Wanvig, president of Globe-Union, Inc., Milwaukee.

A New President—The North Western's invitation to Mr. Heineman last week revealed, in two ways, just how strong the present board considered the newcomer.

Despite his minority membership, Mr. Heineman will serve as chairman and chief executive officer. He will, in addition, participate "jointly" in selection of a new president for the railroad, who will be included among the five directors comprising the Heineman slate.

Steps to select the new man were under way last week. It appears the

Ben W. Heineman

HEINEMAN'S PROGRAM FOR THE M&STL

When Mr. Heineman took over the M&StL in 1954 he said his group had "no spectacular plan" for the road, but that he would give the president "what he needs to run the property." He also added, "the possibility of merger is very much on our minds."

His program for the M&StL was to (1) concentrate on "selling" the road to the public and the shippers; (2) create more on-line traffic sources; (3) invest in "cost savers" and mechanization.

Mr. Heineman frequently has been critical of railroad managements in general. On one occasion he said "carriers are the masters of their own destiny and they can do a great deal to help themselves."

"Top flight young people are not going into the railroad industry," he says, and he believes this should be a major cause of concern to present railroad management. He also favors incentive pay systems to induce young men to enter the railroad industry.

Mr. Heineman is critical of any rate philosophy of charging "what the traffic will bear." He believes that if railroads know the cost of services they perform they can make substantial cost reductions and rates will come down.

He has said he believes the answer to the railroads' high ratio of wages and salaries to the revenue dollar lies in further mechanization.

assignment will go, if he wants it, to Mr. Fitzpatrick. Mr. Heineman is known to have approached Mr. Fitzpatrick, but details were not discussed, and the IC officer had made no decision at presstime for this issue of *Railway Age*.

Meanwhile, no hint was forthcoming as to the future of top C&NW officers, other than Mr. Feucht. Since the latter's illness, J. E. Goodwin, executive vice-president, has functioned as acting chief executive officer. The present operating vice-president is J. J. Stein, who was appointed to that position last summer.

And a Program—In his original approach to the C&NW last January 30, Mr. Heineman pointed out what he considers the "many serious problems" of the road, which may be indicative of the direction the North Western will go in coming months. Here's what he said:

"The road's transportation and operating ratios, in our opinion, are too high; it has the highest wage and salary ratio to the revenue dollar of any railroad known to us; its net cost for hire of cars is, we believe, far higher than necessary; until recently it has been a departmentalized railroad and efforts to make it a divisional railroad have been tentative and incomplete.

"It has recently lost to a competitor 75-year-old contracts for transcontinental passenger trains which, while perhaps operated at a deficit, had definite prestige value, and their loss could well be followed by loss of revenue freight.

"It has accumulated an immense amount of deferred maintenance, and, based on the figures available to us, this deferred maintenance continued to accumulate during 1955, which was on all counts an excellent year for railroads generally; necessary consolidation and mechanization of transportation, maintenance and accounting facilities have either lagged or not begun."

While recognizing that the road has its problems, Mr. Heinemen nevertheless believes something can be done about them. In agreeing to the C&NW board's February 21 invitation, he said that "solutions won't be easy, but with diligence and determination the proper answers can be found."

Troubles Aren't New—Actually the C&NW has never completely recovered from the depression of the 1930's. Part of its troubles can be traced to a relatively short haul that is vulnerable to truck competition; an abundance of light-traffic branch lines, heavy suburban service at Chicago, and to some deficit passenger trains.

Mr. Heineman, as the road's chairman and chief executive officer, will inherit capital and reserve funds of $17 million, working capital of $15 million, and fixed charges and contingent interest of $7 million.

The road had a net income of $2.4 million in 1955, and a net loss of $4.5 million in 1954. Interest on the road's second mortgage income bonds defaulted in 1954. Interest for 1954 will be paid this year, along with partial payment for 1954 interest.

No dividends have been paid on the non-cumulative preferred stock since 1953, and common dividends have been passed since 1950.

Long-Range Transport Future Looks Good

TAA annual meeting in Chicago hears five transportation company officers disagree on details, but not on basic outlook; John Budd is "extremely optimistic"

Presidents of five major transportation companies—whose salesmen often are out after the same business—are not so competitive when predicting the long-range future for transportation. As they see it, the future looks good.

The five chief executives addressed the annual meeting of the Transportation Association of America in Chicago February 14. They disagreed over some details, but there was no argument over the basic outlook.

• John M. Budd, Great Northern: "I am extremely optimistic, for I am confident the American sense of fair play will bring about, in the near future, a more equitable treatment for railroads and that railroads will continue as the mainstay of the nation's transportation system."

• W. A. Patterson, United Air Lines: "We forecast intercity travel and revenue passenger-miles at 66 billion for 1965 . . . Out of that we anticipate air travel will increase 86%. Surface travel will decrease."

• B. M. Seymour, Associated Transport: "To meet tomorrow's needs, the trucking industry will explore and develop every possibility that could produce safer, faster, more flexible service . . . But America's present climate of competition, with attendant healthy regulation, must continue as a nurturing force. . . ."

• A. G. Ingersoll, Jr., Federal Barge Lines: "Judging by the past three decades, the shipping public will demand continued extension of barge transportation . . . Today every big common carrier barge line has on order every barge and towboat it's been able to persuade a shipyard to book."

• J. L. Burke, Service Pipe Line Company: "Over 90% of domestic oil production and about a third of all petroleum products move part or all the way by pipe line. A barrel of oil moves as much as 1,400 miles for 39 cents. We know that pipe lines are versatile enough to carry anything in a fluid state if demand is great enough to allow profit after transportation cost."

More on Railroads—Mr. Budd, discussing the future of rail passenger service, said he believes these things will happen:

High class service on through runs between large population centers will continue, and there will be improvements for short, medium and long-distance operations.

There will be a continuing trend toward elimination of local passenger train service outside commuter areas, and a substitution of truck service for distributing local head-end business.

Commuter service undoubtedly will have to be continued, although every effort will be made to put it on a paying basis.

In the freight picture, Mr. Budd

(Continued on page 10)

Chesapeake & Ohio "Railvan" Combines Low Rail Cost, Truck Flexibility

Undergoing test by the Chesapeake & Ohio is a prototype of the radical new vehicle shown here. Engineered and developed by the road's research department, "Railvan" has two sets of retractable wheels. One set is equipped with tires for use on the highway, and the other has flanged wheels for operation on rails. In operation, a loaded "Railvan," with rubber-tired wheels down, would move over street or highway from shipper's dock to rail yard. Then, with wheels reversed, the units would move by rail to destination. Final delivery would be accomplished with the vehicle moving over the highway like a standard trailer. The C&O plans continued development work.

RAILWAY MARKET OUTLOOK THIS WEEK

a RAILWAY AGE Workbook Page

Freight Car Loadings.—Loadings of revenue freight for the week ended February 18 were not available as this issue of *Railway Age* went to press.

Loadings of revenue freight for the week ended February 11 totaled 684,328 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, February 11

District	1955	1954	1953
Eastern	119,030	112,039	109,653
Allegheny	140,775	120,556	119,437
Pocahontas	58,994	49,549	45,425
Southern	126,870	123,075	120,476
Northwestern	74,713	70,168	70,760
Central Western	111,764	109,006	103,053
Southwestern	52,182	54,395	54,902
Total Western Districts	238,659	233,569	228,715
Total All Roads	684,328	638,788	623,706
Commodities:			
Grain and grain products	45,304	43,672	44,088
Livestock	6,418	5,957	5,820
Coal	141,190	125,486	109,820
Coke	13,745	10,265	9,458
Forest Products	41,278	42,614	40,882
Ore	21,247	13,563	15,747
Merchandise l.c.l.	60,848	62,217	64,466
Miscellaneous	354,298	335,014	333,425
February 11	684,328	638,788	623,706
February 4	680,989	635,779	624,385
January 28	691,850	637,116	628,193
January 21	699,286	630,351	617,213
January 14	710,338	639,833	619,871
Cumulative total, 6 weeks	4,078,090	3,779,219	3,737,597

In Canada.—Carloadings for the seven-day period ended February 7 totaled 77,763 cars, compared with 106,792 cars for the previous ten-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
February 7, 1956	77,763	35,745
February 7, 1955	66,981	31,608
Cumulative Totals:		
February 7, 1956	397,638	183,026
February 7, 1955	352,649	161,143

New Equipment

FREIGHT CARS

► *January Orders Decline.*—Orders fell to 1,818 in January, lowest since July 1954, when 883 were ordered, the ARCI and AAR report; December 1955 orders totaled 42,278 and January 1955 orders totaled 5,087; January deliveries were 4,199, compared with 3,796 in December 1955 and 2,088 in January 1955; February 1 backlog was 144,946 cars, compared with 147,320 on January 1 and 18,395 on February 1, 1955.

Type	Ordered Jan. '56	Delivered Jan. '56	On Order Feb. 1, '56
Box—Plain	0	1,830	59,862
Box—Auto	0	0	2,900
Flat	1,060	320	6,215
Gondola	0	62	12,594
Hopper	0	899	42,698
Covered Hopper	239	504	6,142
Refrigerator	0	83	4,958
Stock	0	44	256
Tank	519	380	7,484
Caboose	0	8	266
Other	0	69	1,571
TOTAL	1,818	4,199	144,946
Car Builders	1,806	2,981	68,085
Company Shops	12	1,218	76,861

New Facilities

► *Pullman-Standard Improvement Project.*—About $250,000 will be spent to modernize car painting and cleaning facilities at Butler, Pa., freight car plant of Pullman-Standard Car Manufacturing Company; all such operations will be centralized in one building adjacent to main erection track; project scheduled to begin within 30 days and take about one year for completion.

► *Canadian Pacific.*—About $10,000,000 will be spent to construct 17-story, air-conditioned, 400-room addition to Toronto's Royal York Hotel; N.R. Crump, CPR president, said addition will bring hotel's capacity to 1,600 rooms, "making it by far the largest hotel in British Commonwealth, and the leading hotel in the CPR chain"; excavation expected to start next November with entire project to be completed by December 1958.

► *Chicago & North Western.*—Negotiating with Chicago Transit Authority to relocate Lake Street elevated line in Oak Park, Ill., from street level to North Western's parallel grade elevation; CTA would save some $425,000 annually in grade crossing maintenance, while C&NW would receive added rental revenue.

► *Missouri-Kansas-Texas.*—Opened new downtown ticket office, Dallas, Texas; office features continuous plate-glass front, vinyl tile floor, and suspended acoustical ceiling with recessed lighting.

► *Sacramento Northern.*—Construction of a 1.6-mile line is proposed in application filed with ICC. A connection with Western Pacific, line would be part of project, involving also trackage rights over WP, whereby SN would restore service in Marysville-Sacramento area, meanwhile abandoning line damaged by floods.

(Continued from page 8)
cited railroad efforts to keep their customers' overall costs to a minimum. He said specialized equipment—wide-door box cars, "damage-free" cars, Airslide cars and the like—is being provided as rapidly as it is justified and can be paid for.

Parmelee Sues Rails for $19.2 Million

The Parmelee Transportation Company has filed a $19,200,000 suit for triple damages in the U.S. District Court at Chicago. The suit claims a conspiracy in violation of anti-trust laws deprived the company of its interstation transfer business in that city.

Defendants are four railroad presidents; six railroads; the Western Passenger Association; Hugh W. Cross, former ICC chairman; John L. Keeshin, Chicago trucker; and Mr. Keeshin's Railroad Transfer Service, Inc. The Keeshin firm took over Parmelee's Chicago depot transfer business on October 1, 1955, when the railroads terminated their 102-year-old agreement with Parmelee.

Railroad presidents named individually in the suit were Paul E. Feucht, Chicago & North Western; Wayne A. Johnston, Illinois Central; Howard E. Simpson, Baltimore & Ohio; and Fred G. Gurley, Santa Fe. The suit also names their railroads, as well as the New York Central and Pennsylvania.

Parmelee charges the defendants entered into a conspiracy to take away its business and give it to the Keeshin firm. Hugh W. Cross "resigned under fire last November 25 after it was disclosed that he had interceded in the Keeshin firm's behalf with three railroad presidents," the Parmelee statement said (*Railway Age*, December 5, 1955, page 15). "Two railroad presidents," the statement continued, "testified before the Senate Permanent Subcommittee on Investigations that they had heard statements that Cross was to head the new Keeshin company."

The suit charges that Mr. Keeshin promised Mr. Cross "a valuable consideration" for his intercession and that as part of the deal, if the railroads gave the Keeshin firm the contract, Mr. Cross "would give favorable consideration" to the carriers before the ICC.

The suit claims Parmelee has suffered "actual damage in its business and property" amounting to some $6 million and it asks for triple damages under federal anti-trust acts. It also seeks an injunction restraining the defendants "from continuing the aforesaid combination, conspiracy, and concert of action," and a ruling from the court nullifying the contract the Keeshin firm has with the railroads.

Parmelee has another suit pending for $8.5 million in damages and unpaid claims against the Western Passenger Association, 21 railroads and three Chicago depot companies (*Railway Age*, December 19, 1955, page 40). Parmelee claims the roads owe it some $7 million for baggage handling and another $1.5 million in damages.

In still another case, the city of Chicago is awaiting a United States Supreme Court ruling before acting on a lower court decision that the Keeshin-operated transfer service has no right to transfer passengers in Chicago because it holds no city terminal vehicle licenses.

Aerial Ladder Truck Aids Line Maintenance

To help replace messenger cable which supports signal and communications aerial cable in the Chicago terminal, the Illinois Central has purchased a truck equipped with utility body and hydraulic aerial ladder. The ladder can lift a lineman to a working height of 30 ft, and can rotate in a nearly complete circle. The truck, fitted with retractable flanged wheels, can move either by highway or rail. When spotted at a road crossing, the truck can be taken off the track in about one minute, thus enabling it to clear quickly for trains. The ladder truck is being used on the South Chicago suburban branch for replacement of 10 miles of messenger cable, and estimates are that its purchase price will be saved on the one job.

AAR Favors Highway Levy On Weight-Mileage Basis

The Association of American Railroads has urged the House Committee on Ways and Means to provide for financing the proposed federal highway program with user charges designed to reflect use made of highways by various types of vehicles on the basis of their weight and mileage.

The association's view was embodied in a statement made to the committee by Burton N. Behling, economist of the Bureau of Railway Economics. "The sound approach to the highway financing problem," Dr. Behling said, "is to require the large and heavy vehicles to pay the cost of their extraordinary demands, unless they are willing to build, maintain and pay taxes on their own rights-of-way."

Four-Point Plan—The AAR economist suggested a four-point structure of highway user charges that includes taxes on gasoline, diesel fuel and large tires, with the alternative of graduated annual fees.

Dr. Behling called the gasoline tax the "most feasible" method of levying a basic user charge, but he said it was "equitable only if applied in conjunction with special graduated charges on heavy vehicles." He also said that a fuel tax alone, or any similar across-the-board tax "is grossly discriminatory against the millions of motorists and operators of other light vehicles."

Cabinet Report May Not Get Senate Hearing Now

The Senate Committee on Interstate and Foreign Commerce has not yet made a firm decision as to whether or not it will hold hearings this year on the pending bill, S.1920, to implement recommendations of President Eisenhower's Cabinet Committee on Transport Policy and Organization.

This was indicated in remarks made recently on the Senate floor by the committee's chairman, Senator Magnuson, Democrat of Washington. A resolution to provide funds for the committee's activities was under consideration, and Chairman Magnuson said that $50,000 of the $250,000 in-

volved would not be needed if the committee should decide not to consider S.1920 "at this session."

Big Job—That the senator plans to make any committee study of the cabinet report a comprehensive one was also indicated. He said:

"If we are required to proceed with the so-called Cabinet Committee transportation inquiry, under no circumstances could we go ahead with the inquiry without hiring at least eight or ten additional employees. We would require experts and lawyers, and persons with ICC experience. If there is no inquiry, I would return the money."

Senator Ellender, Democrat of Louisiana, broke in to say he did not see "how such bills can be taken up and considered during this session." Mr. Magnuson replied that "whether that be done or not, the work has to go on."

He added that the ICC "may have as many as 50 people" at work on the matter "in order to get a report to us." He also said that the "whole policy and concept of transportation in the United States" is involved, and that there may be an occasion this session "when the committee will decide to go ahead with hearings."

AT&SF Passenger Service via Peoria?

Possibility that the Santa Fe will start passenger service through Peoria, Ill., if the ICC grants permission to the Santa Fe and Pennsylvania to acquire jointly the Toledo, Peoria & Western, was revealed at the closing sessions of ICC hearings on the sale at Peoria.

I. C. Bruce, general passenger traffic manager of the Rock Island, testified that he thought it would be "feasible" for the Santa Fe to inaugurate or participate in passenger service through Peoria. The Rock Island, Nickel Plate, Wabash and Burlington want to share equally in ownership of the TP&W with the Santa Fe and PRR. The Minneapolis & St. Louis would like to gain exclusive control of the Peoria road (*Railway Age*, July 18, 1955).

Mr. Bruce testified that any new passenger service through Peoria would be "highly competitive" and would "place the Rock Island's entire Peoria passenger operation in jeopardy." The Santa Fe formerly operated a passenger train from Chicago to Pekin, Ill., coming within 13 miles of Peoria at a junction with the TP&W. The service was discontinued last year.

The 10-day hearing on the proposed sale of the TP&W closed February 14. Hearing examiner Paul C. Albus set April 2 as the deadline for written briefs.

Ben W. Heineman, chairman of the M&StL executive committee, testified "that if (the TP&W) falls into the hands of the Pennsylvania and the Santa Fe, or indeed, into the hands of any combination of the interested roads, we would be materially and affirmatively injured."

Fred Gurley, Santa Fe president, testified that most TP&W overhead traffic eastbound comes from the Santa Fe and most westbound traffic comes from the Pennsylvania. He added that "this is a strong reason why control of the TP&W should be by only two railroads."

James M. Symes, president of the Pennsylvania, told the commission he does not think ownership of the TP&W by the M&StL would "be in the public interest." He said that in his judgment the M&StL could not justify operation of the TP&W west of Peoria because of the parallel M&StL lines.

Rock Island President Downing Jenks said he could not imagine "why ownership by more than two stockholders would make [TP&W management] inefficient or unprogressive."

J. R. Coulter, TP&W president and final witness at the hearings, said ownership of the road by the Santa Fe and Pennsylvania would bring more traffic on the TP&W through the Peoria gateway.

Two Diesels Replace Four Steamers

Prototype of "standard tug" adopted by railroads operating carfloats in New York harbor, the "Buffalo" (above), went into service for the Pennsylvania this month. Four old steam-powered boats were replaced by it and sister tug, the "Cleveland," both built by Bethlehem Steel Company and each powered by a General Motors 1,000-hp diesel-electric engine. Boat features high maneuverability, extra high wheel house for more visibility, greatly strengthened hull to withstand impacts and strain of "squeezing" between carfloats. Acquisition brings PRR tug fleet to 29, of which 13 are diesel or diesel-electric units. Lackawanna has ordered five similar boats.

Trustees Nominate Neff To Be MP President

Paul J. Neff, 71, chief executive officer for the trustee of the Missouri Pacific since 1946, has been nominated to be president of the road when it comes out of reorganization this spring (*Railway Age*, February 6, page 12).

MP Trustee Guy A. Thompson last week filed a motion with the U.S. District Court in St. Louis nominating Mr. Neff, along with new directors for the reorganized company.

The court has scheduled a hearing later this week on consummation of the reorganization plan. If no hitch develops, reorganization managers will then take the last step—filing articles of incorporation for the new company with the Missouri secretary of state.

Equipment Exhibit Planned for September

Preliminary steps have been taken to prepare an exhibit of equipment, materials and devices used by maintenance-of-way and structures forces, scheduled to be held at the Coliseum, Chicago, next September 17-20. The exhibition, a joint effort of the Track Supply Association and the Bridge & Building Supply Association, will be held during the concurrent conventions of the Roadmasters Association and the American Railway Bridge & Building Association.

Invitations to participate in the exhibit were mailed to manufacturers January 9, and the response is reported to have been "very satisfactory," with "many firms asking for considerably larger allotments of space than used

previously," while requests for booths have been received from several new exhibitors. Desirable space is reported to be still available for other companies who may wish to exhibit. Inquiries should be addressed to Lewis Thomas, director of exhibits, Room 705, 59 E. Van Buren street, Chicago 5.

Rate Increase Off Until March 7

At the request of the Interstate Commerce Commission, the railroads have postponed until March 7 the effective date of tariffs proposing the 7% freight-rate increase involved in the Ex Parte 196 case.

The 11-day postponement from the original effective date of February 25 was arranged February 22 at the opening of the third and final day of oral argument in the case. Commissioner J. Monroe Johnson, who was presiding, said the commission would like to request a postponement until March 7; and he went on to ask if that would be agreeable to the railroads. E. A. Kaier, general attorney of the Pennsylvania, and chief railroad counsel in the case, replied that it would. Whereupon Commissioner Johnson asked if it would be agreeable to the shippers, and he got a laugh.

Cost—Meanwhile, Mr. Kaier who made the railroad argument had said that every month the proposed increase was delayed meant a revenue loss of $48 million. On that basis, the 11-day delay would mean a loss of something like $16 million. The commission, of course, had power to suspend the tariffs, and "possible suspension" is involved in the investigation of them which the commission set up on an expedited basis (*Railway Age*, January 16, page 10).

Last week's oral argument followed upon hearings held the previous week for the purpose of cross-examining some of the numerous witnesses who submitted evidence in the form of verified statements. More than 60 interests were allotted argument time, ranging from five minutes to Mr. Kaier's 2½ hours. Participants included congressmen and senators who appeared to argue that agricultural products should not get the increase.

The Need—Mr. Kaier's argument stressed the railroad position that the proposed increase "is occasioned by one thing and that alone—namely, the necessity of increasing revenues to meet a huge increase in wages, payroll taxes and the prices of fuel, materials and supplies that has come upon us in an extremely short period of time." He calculated that the latest round of increases will cost more than $590 million annually, $417 million of which is comprised of wage increases.

In urging the commission to permit the tariffs to become effective "without suspension," and "continue the investigation if you think it necessary," the railroad attorney pointed out that the railroads have agreed to make refunds on any rates that might ultimately be found unreasonable. At the same time, Mr. Kaier maintained that evidence submitted by railroad witnesses had shown that the rate level after the increase would be reasonable.

In his rebuttal statement, he insisted that the additional revenue which the proposed general increase would yield is needed. Thus, he argued, any so-called hold-downs (cents per 100 lb. or per ton ceilings) would have to be offset by percentage increases higher than 7% on those commodities which are not given such exceptional treatment.

Less Than 5% Return — Mr. Kaier had a statement which showed that the rate of return on net investment would have been only 2.7% (and on commission bases less than 3%) for the 12 months ended September 30, 1955, if the "new costs" had been effective in that period without offsetting rate increases. The statement also showed that if the proposed rates as well as the new costs had been in effect, the return on net investment would have been only 4.29%, as compared with the 4.23% which it actually was.

The net income for the 12 months was $925 million. Mr. Kaier's statement indicated that it would have been down to $519 million if the new costs alone had been in effect, and that it would have been only $940 million if an offsetting rate increase of 7% had been applicable.

Milwaukee Signal Crews Move into 28 House Trailers

This month signal and communications construction crews on the Milwaukee move from their old camp cars into 28 new lightweight highway house trailers, one of which is shown here.

Each crew of 10 men and a foreman has three 30-ft trailers, one for cooking and eating and the others for recreation and sleeping. Each crew has two motor trucks to haul tools and materials, to transport men to and from their work, and to pull the trailers from one site to the next.

According to Virgil E. Glosup, the road's assistant chief engineer, signals and communications, use of the trailers will be advantageous because, among other things, they "are closer to the work, are more convenient than camp cars, and can be equipped and maintained for less money." Complete information about the trailers appears in an illustrated article in the March issue of *Railway Signaling & Communications*, monthly publication associated with *Railway Age*.

"TRADITIONAL DIFFERENTIALS"

Ten essays on "Traditional Differentials in Railway Rate-Making (Should They and Can They Be Maintained under Rivalry from Contract and Private Transportation)" — the subject of a prize contest conducted jointly by President Warren W. Brown of the Monon and by *Railway Age* in 1955—have been published in a 44-page booklet, and a limited supply is now available from *Railway Age* (30 Church street, New York 7). Single copies are $1 each, postpaid; 10 copies, 75¢ each, postpaid; 50 copies, 50¢ each, f.o.b. printer; 100 copies or more, 40¢ each, f.o.b. printer.

The booklet contains the two prize-winning papers (by Alan M. White, member, Railroads' Tariff Research Group; and William G. Scott, Transport Economist, Railway Association of Canada), and eight other essays considered by the judges as especially meritorious.

Johnston Defends Erie Plan To Use DL&W Terminal

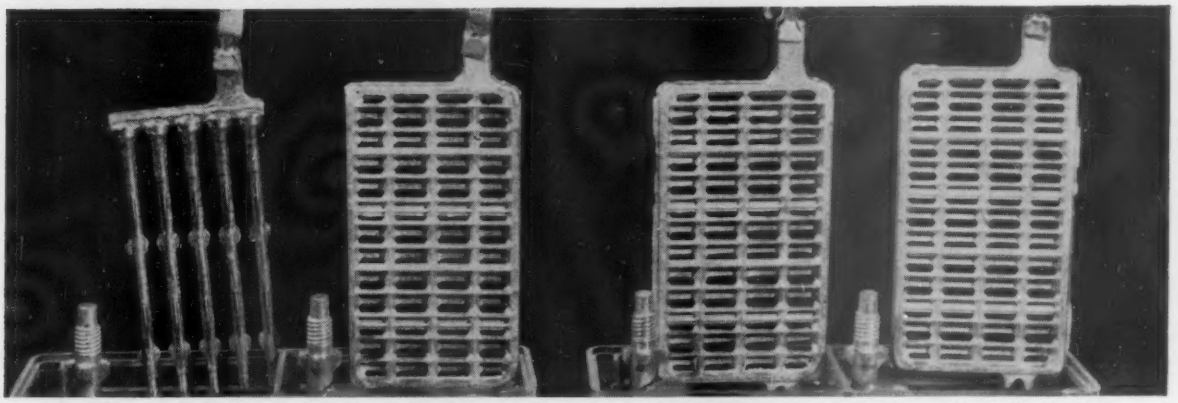
The Lackawanna passenger terminal at Hoboken, N.J., will be able to handle the increased numbers of trains and passengers when the Erie transfers its New Jersey terminus to the terminal, according to Erie President Paul W. Johnston.

He told the New Jersey Board of

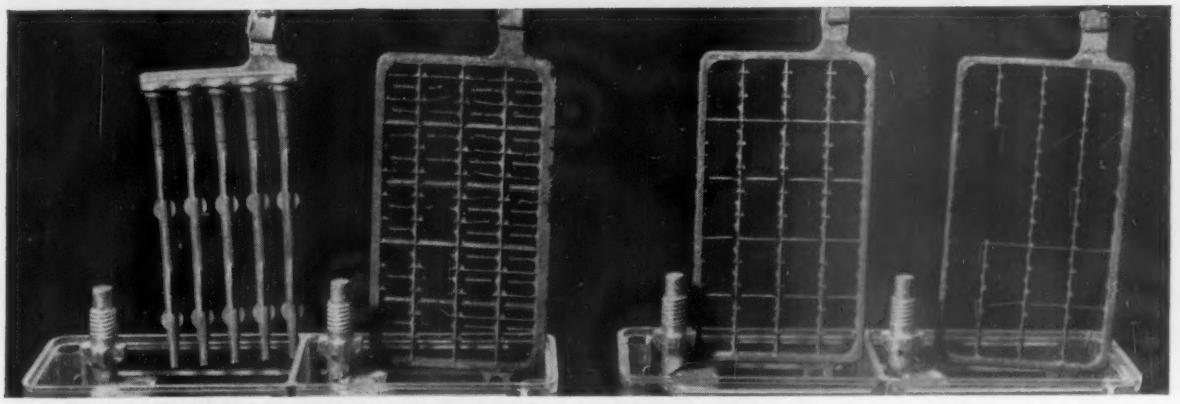
(Continued on page 15)

EXIDE-IRONCLAD BATTERIES

For railway diesel starting

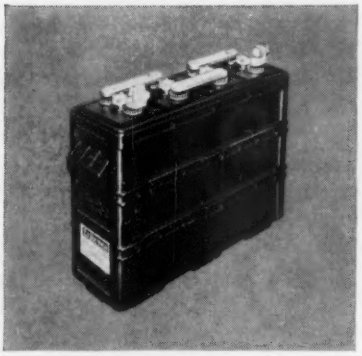


BEFORE: Silvium alloy | Alloy "A" | Alloy "B" | Alloy "C"



AFTER: Note how the Silvium grid resisted corrosion. Compare it with the other alloys.

Corrosion resistant SILVIUM prolongs battery life



BATTERY FOR RAILWAY DIESEL STARTING. Model MV-D. Its tubular construction provides for extra reservoirs of electrolyte adjacent to positive plate. Battery better able to supply sudden heavy power drafts to turn over starting motors. Extra heavy connectors offer minimum resistance to heavy currents. Write for Bulletin 5348.

Reaching down deep into every Exide-Ironclad Battery are the fingers of Silvium alloy metal which form the grids of the famous Exide-Ironclad positive plates.

Silvium is a special alloy developed by Exide to resist corrosion and thus prolong battery life. For proof, Exide research engineers compared the performance of an Ironclad Silvium grid side by side with ordinary grids of other lead alloys. As the photographs above show, only Silvium came through the test without damaging corrosion—undiminished in size, unimpaired in strength. The other grids showed from moderate to severe corrosion.

Tests have proved that Silvium is not only more resistant to corrosion, but also a better conductor of electricity. Hence it both prolongs battery life and —because there's less internal battery resistance—more readily permits heavy drafts of power.

This special material is only one of the many exclusive features which have made Exide-Ironclad Batteries world famous for high capacity and long life. When you order batteries for heavy duty applications, or the equipment requiring such batteries, be sure to specify Exide-Ironclad. Write for detailed bulletin. Exide Industrial Division, The Electric Storage Battery Company, Phila. 2, Pa.

Exide®

Questions and Answers

Of current interest — *to the Transportation Department*

What are the duties of a trainmaster? Are they the same today as they were 30-35 years ago . . . ?

Answers to this question appeared in the issues of February 13 and January 30. Respondents were asked to compare the job of the trainmaster today with the description of his duties as outlined by the late L. F. Loree in his book "Railroad Freight Transportation."

CONDUCTED By G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, *Railway Age*, 30 Church Street, New York 7.

Trainmaster has more office duties today

Here's an answer from R. E. Hallawell, who just retired as general manager of the Southern Pacific. This was written before Mr. Hallowell's retirement.

"I would agree with Mr. Loree that the work of the mechanical and transportation departments is intimately allied. However, on our railroad the road foreman of engines works under the direction of the master mechanic. He is primarily responsible for observation of locomotive performance under service conditions. Also, most all our trainmasters have office duties of considerable importance, such as preparation and holding of investigations, submission of reports on operating efficiency tests, and interviewing and selecting of applicants for employment.

"We do not have a formal description of the duties of a trainmaster. However, below is a resume of duties which can be considered as *typical* of those performed by a trainmaster on our railroad:

"As a transportation officer, he is immediately responsible for the safe, efficient, and economical performance of assigned duties in a terminal or district of a railroad operating division.

"He supervises, within his assigned territory, all phases of train operation, which may include both freight and passenger service, and may consist of initial make-up, terminal distribution and switching of through and local traffic.

"He plans and organizes in advance to provide for train, yard and engine crews, cars and motive power needed to meet operational requirements in his territory.

"He supervises train, yard and engine crews, station employees and clerical workers. He observes their performance to ensure work is accomplished in the safest, most efficient and most economical manner, consistent with the needs of shippers and the traveling public.

"He calls upon shippers to determine their transportation needs. He personally handles service complaints in those cases where it appears advisable that a company officer deal with the shipper to resolve the problem.

"He ensures that all employees under his jurisdiction are properly trained to fulfill the duties of their positions. He conducts periodic efficiency tests on train, yard and engine service employees to assure their compliance with operating and safety rules.

"He interviews and selects applicants for employment; observes employees under his jurisdiction during their probationary period and recommends their retention in, or removal from, service before expiration of their probation.

"He investigates rule violations and other infractions committed by employees. He carries out appropriate corrective or disciplinary action, including the preparation for and convening of formal hearings when required."

WATCH FOR IT

In the March 12 *Railway Age*—another Car Service "quiz." This one will move out West again. And while the problem still is mainly one of loading box cars so that they'll be at—or close to—home when unloaded, the situation will involve a little different twist.

Be sure and send us your answer. The April 23 issue will list the names of everyone sending in correct answers.

Incidentally, not for some time has anyone sent us a question we could use. Remember, we'll pay you $5 for each question we use.—*G.C.R.*

(Continued from page 12)
Public Utility Commissioners, investigating the proposed coordination of terminal facilities (*Railway Age*, November 14, 1955, page 8), that the two roads will spend $2,000,000 for improvements to make the changeover possible. The Erie, Mr. Johnston said, hopes thereby to cut out-of-pocket losses on commuter service which now costs the road $2,500,000 annually. The Erie proposes to abandon its Jersey City passenger terminal, as well as ferry service from there to Manhattan, substituting the Lackawanna's Hoboken facilities.

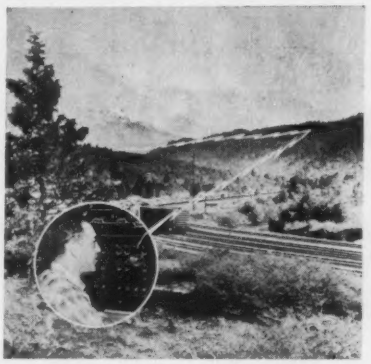
SP to Use Microwave Equipment

The Southern Pacific has ordered from Motorola, Inc., equipment to establish microwave communication on its main line in mountainous northern California.

Microwave terminal stations will be at Dunsmuir and Black Butte, 25 miles apart, with a repeater station at Mt. Shasta, eight miles south of Black Butte. The microwave signal (line-of-sight radio) is beamed from Dunsmuir to a hill-top passive reflector, then direct to the drop-out repeater at Mt. Shasta: from there to another passive reflector on a hill-top and then direct to the Black Butte terminal station.

The system will have 32 voice channels with five channels dropped out at Mt. Shasta. Sixteen channels will provide through service for the dispatcher's radio system, telephone, printing telegraph service, CTC controls and standby. There will be 100 per cent standby, both microwave and power, at the terminals and repeater stations with automatic changeover to standby equipment.

Application for construction of the microwave system has been filed with the Federal Communications Commission, and approval is expected probably in June. Upon receipt of FCC approval, the SP will start construction of access roads to the mountain-top passive reflector points, and buildings, as well as actual electrical work, with completion tentatively set for mid-August. Following completion, a 30-day trial period will be inaugurated, which means that regular communications service will be assumed about September 15. As soon as the microwave has proved its dependability, the railroad plans to take down the signal and communications pole lines.



AFTER SP MICROWAVE is installed, dispatcher will talk via "beamed radio," his voice being "bounced" off a hill-top reflector toward an automatic repeater station.

Financial

McGinnis Dual-Role Case Dismissed by the ICC

The ICC has given the usual type of dismissal to the proceeding which involved the application of Patrick B. McGinnis for authority to serve as president of the Boston & Maine while continuing in the New Haven presidency. Mr. McGinnis withdrew the application when he resigned from the NH prior to his election to the B&M presidency which he now holds.

The usual type of dismissal was opposed by the Massachusetts Department of Public Utilities and Lillian Cowan, a NH stockholder, who filed motions seeking to have the case dismissed "with prejudice," or the McGinnis pe-

(Continued on page 34)

HERE'S WHERE GENERAL MOTORS' AEROTRAINS WILL BE SHOWN AND TESTED

AEROTRAIN 1001
(New York Central)

Santa Fe	March 1 to March 8—Railfan trip, Chicago to Los Angeles; on line exhibits.
Union Pacific	March 8 to March 22—Exhibits at Las Vegas, 9th; Salt Lake City, 10th; Ogden 11th; Portland, 12th and 13th; Seattle, 14th; Tacoma, 15th; Boise and Pocatello, 16th; Cheyenne, 17th; Denver, 18th; Topeka, 19th; Kansas City, 20th; test run Omaha to Cheyenne, 22nd.
Southern Pacific	March 23 to April 4—California exhibits.
Illinois Central	April 8 to April 12—On line exhibits.
Chicago & North Western	April 13 to April 18—On line exhibits.
Great Northern	April 19 to 25—On line exhibits.
New York Central	April 27 to July 30—Revenue service, Chicago-Detroit.

(Subject to change)

AEROTRAIN 1000
(Pennsylvania)

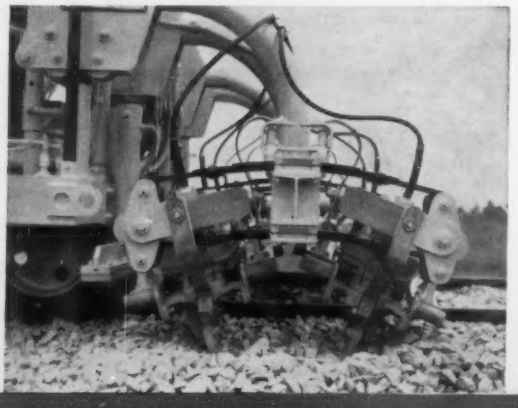
Pennsylvania	February 26 to May 29—Revenue service, Pittsburgh to New York.
Canadian National	June 2—Exhibit in Montreal
Southern	June 7 to June 11—Exhibits on line. (Receive train at Washington)
Seaboard	June 12 to June 16—Exhibits on line. (Receive train at Atlanta)
Baltimore & Ohio	June 21 to June 24—Exhibits on line. (Receive train at Washington)
Wabash	June 26 to June 30—Exhibits on line. (Receive train at Chicago)
Missouri-Kansas-Texas	July 1 to August 3—Revenue service from Kansas City to Dallas; with option for additional revenue service August 4 to September 2 from San Antonio to Dallas. (Receive train at Kansas City)

(Subject to change)

Now Better than ever!

JACKSON TRACK MAINTAINER

Note in the close-up views how the tamping bars penetrate way under the tie and directly beneath the rail.



Two important improvements made in the Jackson Track Maintainer for '56, make it more than ever the greatest piece of equipment ever devised for both putting up and maintaining finest quality track under ALL CONDITIONS.

1. Perfect directional control of the tamping bars assures even greater efficiency in the tamping operation. Uniform, close consolidation of the greatest amount of ballast in the normal tamping area is the result, with maximum compaction secured right under the rail.

2. A material increase in vibratory energy — the heart of the Jackson tamping method — provides super-abundant, correctly applied power to the tamping bars so that no job is too tough — regardless of lift of track and ballast size or condition.

Thorough investigation is bound to convince you that purchase of this machine constitutes the best possible investment in an all-purpose, on-track tamper.

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JACKSON VIBRATORS, INC.

LUDINGTON, MICHIGAN

Railroads—Retail Or Mass-Production?

The chief executive of a railroad which is noteworthy for its modernized, "mass transportation" characteristics recently visited an automobile manufacturing plant where he was greatly impressed by the efficiency of its assembly line. A new automobile was coming off this line every few minutes—each one all ready to take off under its own power. And there was variety in the styles of the automobiles being produced too—they were not all identical. The whole operation, of course, was highly mechanized and the machines mostly automatic.

What this railway executive saw was certainly remarkable—but probably not any more so than the operation of his own railroad would have been to a visitor from the manufacturing industry. Because on a well-equipped railroad—handling heavy traffic in trains of substantial size, with modern equipment throughout—there is a mass-production of transportation which is in every way comparable to that found in the manufacturing industry.

Suppose, however, that, in looking at an automobile assembly line, the visitor also should observe, in the same plant, a few automobiles being assembled by the handicraft methods of forty or more years ago. Such a sight would surely raise a question as to why—the assembly line technique having been perfected—its advantages were not extended to the manufacturer's total production. Isn't there a parallel to this paradoxical situation to be found quite generally in the railroad industry?

The principal transportation work the railroads do is done by mass-production methods—heavy trains on well-built lines with favorable grades and curvature, with efficient power, signaling and yard facilities. But mixed in with this highly efficient performance, most railroads find themselves, also, still in the retail and handicraft stage of the transportation business. These small-scale operations are not usually highly important from the standpoint of total traffic volume or total revenue, but on the expense side their ratio of importance is very high.

It is not the railroads, of course, that are primarily responsible for the industry's continuance in the retail-quantity transportation business. Their status as regulated common carriers and their charter obligations require them to provide many kinds of detailed services which are not remunerative—and many of which could be done more economically by other forms of transportation.

Granted, therefore, that—with all the determination in the world—the railroads could not, of their own volition, become as completely a mass-producion industry as many manufacturing industries have, wouldn't the attainment of this condition still be useful as a goal to strive for?

Such things as peddler-car operations, poorly patronized passenger trains, the maintenance of separate terminals and other facilities where joint operations would reduce expense—the continuance of these conditions means addition to the total costs of railroad service, making the railroads more vulnerable to competition.

This paper has never given any credence to the assumption that the railroads are losing many hundred of millions of dollars from their passenger service—as advocates of "fully allocated" expenses would assume. In other words, the alleged "burden" of unprofitable railroad services on shippers who are paying remunerative rates is by no means as grievous as some of the enthusiasts on that side of the argument would have it believed. Nevertheless, the really economical and profitable service by the railroads is that produced by "mass-production" techniques.

For the railroads to give greater emphasis to their mass-production side does not, by any means, entail neglect of existing customers. For example, mass-production methods are applicable to the handling of LCL traffic, as well as to carloads or trainloads. As for passenger traffic—methods which would substantially increase traffic would turn many operations which are "retail" today into mass-production movements.

Before World War I a haircut as good as those purveyed today for $1 or even $1.50 was obtainable for 25 cents. But a kilowatt-hour of electric energy which may have cost about 12 cents in 1914 may be had today at a fraction of that amount, in spite of price inflation. The haircut and the kilowatt-hour offer excellent examples of the difference between handicraft and mass-production industries. The more the railroads can definitely and consciously and continuously strive to emphasize their characteristics in the latter category, the more likely they are to please their customers and attract new ones; and to assure the industry's growth and prosperity.

How Will Today's Supervisors Do Tomorrow?

By GEORGE N. DAFFERN
Research Assistant, Personnel Department
Canadian National

This is the first in a series of *Railway Age* articles on the very important subject of upgrading supervision, to run over a period of several months. Since a supervisor may be defined as any person who has one or more persons reporting directly to him, the material in these articles applies equally to the president and the foreman.

If there is sufficient demand, these articles will be reprinted in pamphlet form and sold at a nominal price, after the series is completed. Anyone interested in reprints should address: Managing Editor, *Railway Age*, 30 Church Street, New York 7.

In 1854 Henry V. Poor, leading U. S. railroader and editor, wrote to another railroad man, "If our roads fail it must be from bad management."

Management, to those old-time railroaders, already meant in large measure management of people. Other railroad executives of those days were saying such things as: "Among the important duties of a commander is that of keeping a good state of feeling among subordinates"; "The new problems of management divide themselves primarily into those of management and those of communications"; and, "The only way we are going to develop men is to give them the opportunity to show themselves."*

Today, management of people still is one of the most important tasks facing railroad executives. Most present-day railroad leaders, like their predecessors, are aware that better management of personnel is one of the best ways to help solve the many problems facing their industry.

One lesson to be drawn from the fact that, even after a century of tackling the matter, better management of personnel is still a major problem is that progress in the overall improvement of management and staff comes slowly. A second lesson is that, despite the admitted deficiencies of all levels of railroad management and staff, some progress in their development is constantly being accomplished: otherwise, present-day diesels, luxuriously equipped passenger trains and other technical improvements certainly never would have come about.

It was with the realization that improvement in railroaders, as with the personnel of other industries, although slow, could be brought about, that a new personnel practice was instituted on the Canadian National in 1951. The practice is termed "Performance Appraisals" because it is based on a systematic look at each person's performance, but its ramifications are such that it could be termed "Personnel and Organization Improvement."

First Things First

Because it was felt that little or no progress could be made in improving CNR personnel without first trying to find out what each individual actually was doing, a program was installed to encourage all levels of management to pay more attention to their subordinates and their subordinates' performance. The program is based on a policy that more adequately recompenses (in its

* From "Railroad Leaders—1845 to 1890," by Thomas C. Cochran, Harvard University Press, 1953.

widest meaning) the improved performances of each individual supervisor, and at the same time holds each one accountable for his performance. Tied in with this basic intention to provide maximum incentive to supervisors, there are other objectives, such as encouraging and helping individual development; arranging for more satisfaction of an individual's needs and aspirations; decentralizing authority and responsibility; encouraging and helping supervisory leadership; and encouraging and helping closer relationships between supervisors and their subordinates.

Three stages of activity are involved in the program. First, there is an appraisal of a subordinate's performance by three supervisors sitting as a group. Then an interview is held between the key appraiser (the immediate supervisor of the subordinate) and the person appraised, when the appraisal is discussed. Finally, both the appraisal and the interview are reviewed by higher management and on the basis of the review a conclusion is reached about the probable future progress of the person. From these three stages information is obtained to set in motion practices that eventually will achieve the objectives already outlined.

To elaborate on these three stages:

STAGE 1

A subordinate's results, methods and personal qualifications are broken down for consideration under these factors:

> *Job knowledge, leadership, initiative, decision making, dependability, analytical ability and vision, stamina, ability to express himself, planning and organizing, getting along with others, delegating duties, development of personnel, quantity of work, quality of work, and control of costs.*

Three supervisors appraise the subordinate because the result of three people's effort in open discussion is far better than an appraisal by one or even by two persons. Appraising is an educational process in itself and a single appraiser can learn from no one; all he can do is record his opinions, correct or not. Two appraisers are not sufficiently strong to avoid domination by the stronger one of the two, whether his strength is the result of his personality or his status. On the other hand, the judgment of three supervisors is surprisingly good, in CNR's experience, if the opinions of the subordinates appraised are anything to go by.

Of nearly 3,000 appraisals completed in CNR, more than 99% of the subordinates appraised said at their interview that they considered a fair assessment of themselves on their jobs had been made. This is in spite of the fact many were told that their performance was considered not completely satisfactory.

Four major benefits already have resulted from this first stage of the program. These are:

1. The systematic recording of supervisors' opinion of the performance of the subordinates;
2. Uncovering of subordinate's unknown strengths;
3. Recording of his weaknesses; and
4. The effect on the appraisers themselves, who in taking stock of their subordinates also take stock of themselves and their own responsibilities.

Recording the performance of a subordinate, with reflections of his successful and not so successful projects, helps to ensure that (a) he gets fair recompense for his performance and (b) he can be held accountable if he is falling short of requirements. Recording a person's strengths is of considerable help in ensuring a strong management team. Something like 600 management and supervisory vacancies occur each year in the CNR organization.

Recording an individual's weaknesses already has turned out to be the key to one of the most effective ways of improving management and supervisory efficiency. In numerous instances individuals have effected improvement in themselves following their being told of these weaknesses by their supervisor. In addition, patterns of weaknesses have shown up among numbers of subordinates, and this has helped to locate training needs. For example, in CNR, as might be expected in any railroad, personal qualifications like job knowledge and dependability are strong in the majority of management and supervisory people. On the other hand, in common with railroads and other industries today, leadership is not a common strength.

The last benefit from the appraisal stage—the effect on the appraisers themselves when appraising subordinates—has in some cases caused a change for the better among appraisers overnight. In others it has sown seeds for eventual improvement. Some appraisers have seen their own deficiencies mirrored in the deficiencies of the subordinates they were appraising and have, as a direct consequence, improved themselves. Other ap-

The Author

English-born George Daffern has been with the Canadian National since 1950. Prior to this he served a two-year hitch with the British Transport Commission, the government agency which operates Britain's transportation network. He disclaims any intention of indicating through this series of articles that he is an oracle. The material, he says, is the result of his years of experience. Since many other railroaders are thinking of the problem of tomorrow's supervisors he thinks it possible that his experience may prove helpful.

Author Daffern for many years has been interested in the human factor in productivity. In addition to his experience in transportation, he has worked in manufacturing industry and as a newspaper man. Studies at Morley College in London, as well as a seven-month tour of the U.S., were designed to implement the knowledge gained through working in the field of personnel management.

praisers have found that a discussion about a subordinate's performance points to organization weaknesses in their own section or department or the organization as a whole.

STAGE 2

The interview between the subordinate appraised and his immediate supervisor is vital to all concerned. At this stage the subordinate learns what his supervisor and two others of his seniors think of the job he has done. At the same time, he is able to say what he personally wants out of his work, what help he needs from the railroad for improvement in his work and what he is doing outside his work to fit himself for promotion.

PERFORMANCE APPRAISALS

Operating Department*

Evaluation of Potential—Breakdown by Grades

Exceptional potential	6
Above average potential	276
Average potential	331
No potential	299

Distribution of "No Potentials"

Because of age or health	91
Because there is no avenue of advancement open to them	14
Because they will serve the company and themselves better by remaining in present position	16
Because we need to observe their performance longer before recommendation can be made	17
Because they have reached the limit of their ability	94
Because the performance though satisfactory does not presently warrant recommendation for advancement	45
Because of their own poor performance which disqualifies them for advancement	22

* 912 persons

PERFORMANCE APPRAISALS

Operating Department*

Strengths and Weaknesses—Omitting "Satisfactory" Markings

	More than Satisfactory	Below Satisfactory
Knowledge of job	381	76
Leadership	232	122
Initiative	266	99
Decision making	164	99
Dependability	497	37
Analytical ability and vision	157	93
Stamina	281	48
Ability to express himself	162	118
Planning and organizing	209	106
Getting along with others	346	123
Delegating responsibilities	77	60
Development of personnel	58	81
Quantity of work	113	34
Quality of work	266	61
Control of costs	87	129

* 946 persons

On the other side of the table, the supervisor learns much from each of his subordinates. He learns of their work requirements as they see them—a new typewriter or other material aid, some particular training, personal guidance, etc., of their personal aspirations—promotion goals, increased responsibility, higher salary, etc.; of weaknesses in his own supervision; and so on. This information is providing excellent leads to help supervisors become better supervisors. Four out of five CNR employees interviewed following appraisals have said that they eventually want promotion or more responsibility, and many name their aspirations; better than two out of three want assistance from their supervisor in improving their work, and they say what sort of assistance they want.

STAGE 3

The higher management review of both appraisal and interview enables senior management to get valuable information for promotion arrangements, as well as some clues as to its own immediate subordinates' management skills ("appraising the appraisers," in effect). With the recognition that little can be done to improve morale, and in consequence efficiency, if employees think that promotion procedures are unfairly weighted against them, CNR's performance appraisals are now being used to help make promotion decisions.

Each individual's potential for advancement is assessed and recorded; the next step for him is decided upon, and such things as the particular training or experience needed for his preparation for such promotion are recommended. All this information—excellent grassroots information—should go far to ensure that no one is overlooked in promotion arrangements and that top management knows how well—or not so well—its future management team is being prepared.

The oft-heard complaint "I'm stuck in my corner—no one higher up ever gives me a thought" is becoming a thing of the past. On the other hand, because a man's ability becomes the key to his progress and promotion some have to be told that their poor performance is holding them back. Others have to be told that they seem to have reached the limit of their capacities—and told not only for the benefit of the organization but for their own peace of mind as well.

So much for the three stages of performance appraisals and some of their benefits. However, one other major point must be made. CNR's performance appraisal program is tied to a revised salary structure. This revised structure is an important part of CNR's new personnel management concept. The new salary structure provides a better incentive for effort than did the previous arrangement. The old structure had one basic rate for each job. Consequently it gave insufficient incentive for further effort on the job for the majority of incumbents. The only way to increase take-home pay was to get a higher paying job. This may have provided incentives for those who could hope for promotion, but there was little incentive for the many who could not look to promotion to do more than was necessary to hold their jobs.

The new structure provides a salary range for each job. For each job there is a salary range of something like 30% over the minimum rate. Thus, an incumbent's salary can be anywhere between the minimum and maxi-

mum rates, dependent, in the main, on his performance. The new salary arrangements, revised salary structure and performance appraisals, provide more effective personnel management—for fair recompense for the incumbent and for his accountability for peformance.

In any frank evaluation of the CNR performance appraisal program, mention should be made of some of its imperfections and limitations. In fact, these imperfections and limitations have to be realized by all concerned in CNR in order that performance appraisals achieve their objectives. If the performance appraisals were used as if they were the perfect tool for, say, salary adjustments, promotions, or training arrangements, instead of being used as only one of several tools, effective personnel management would be seriously handicapped. Here then are some of the deficiencies:

1. Performance appraisals are only conducted annually. This is as it should be to be acceptable to busy line management. However, annual appraisals have their limitations as an indication of performance throughout the previous year. It is well nigh impossible —short of installing cumbersome arrangements—to bring to the appraisal table once a year a true and complete record of the year's performance of the individual. The appraisers with the best of intentions will most likely be influenced largly by current issues.

2. Appraisers are biased. Most appraisals reflect in some degree the prejudices and misconceptions of appraisers. For example, it is said that like attracts like: the poor supervisor who cannot organize properly tends to surround himself with subordinates who operate in a similar way; he is not happy with a subordinate who can organize better than he can. In such a situation, and possibly with the best of intentions, a supervisor may well consider those who work like him satisfactory and the more efficient one with whom he is not happy as being not so satisfactory.

3. Railroaders are conservative folk. Undue conservatism respecting modes and standards of performance, seniority, or promotions, can cause manipulated appraisals. Some supervisors tend to appraise their subordinates along the lines they believe their boss's thinking takes, rather than how their own thinking goes.

4. People vary in their thinking and practices. Some are lax in their supervision, others are very demanding. This may be a good thing for society in general and eventually it may be a good thing for performance appraisals. At this initial stage, however, when decisions have to be made about salaries, promotions, etc., by officers using non-uniform appraisals completed by diverse individuals, it makes some appraisals of limited value.

5. Lastly, the forms used and procedure itself are far from perfect. Inadequate measurement factors, insufficient time for the necessary deep digging for pertinent facts during the appraisal, unskilled appraisers, are all handicaps.

More imperfections and limitations could be mentioned, but they are not necessary here. In fact, too long a list may be misleading. Improvement, although a slow process, is possible, and in CNR a start already has been made towards a more effective personnel force, using this admittedly far from perfect procedure.

Morale today is higher among those who have experienced its effect. Some of them have had salary increases because their performance appraisal helped their department heads to decide that they deserved those increases. Some of those appraised have been able to remedy weaknesses which could handicap their advancement, by being advised of those weaknesses. Some have been promoted because their supervisors recommended such moves and backed their recommendations by performance and potential appraisals that supported such moves.

". . . you're not as cost control minded as you might be."

Practically everyone appraised has had a morale boost out of merely talking over his job and his personal aspirations with his supervisor, which so many have never done before. And management—from senior officers downwards—reports considerable benefit from the program.

Typical Results of Performance Appraisals

The following are typical examples of what is happening in the CNR organization as a result of performance appraisals.

One headquarters officer with 30 years' experience told his chief at his interview that this was the best thing that had happened to him in those 30 years. He said "This is the first time that my supervisor has ever discussed with me systematically, and in a logical, helpful way, my contribution to the company. This is the first time I have learned what you and other seniors think of my performance and what you think can be done to help me improve."

A superintendent's chief clerk improved his attitude in dealing with others almost immediately after having this weakness pointed out to him. As the superintendent explained it to the writer, "He had known for a long time that I thought he was too brusque with his subordinates but he must have thought that it was just a quirk of mine saying so. However, when I interviewed him and told him that not only I but Joe and Bill also considered that this was a weakness on his part he did something about it. Since then he's been a different person—going out of his way to be considerate."

The superintendent then added: "There is one other thing I should mention. My secretary told me that he (the chief clerk) had told him of his interview and had said that had he had such interviews 10 years ago he would be interviewing chief clerks himself by now."

A third example shows the chain effect of appraisals. A senior operating officer thought costs in one of his sections could—and should—be cut. In appraising the

section head he recorded it so and at the interview he impressed on him the desire for cutting costs and showed him where he thought he could improve.

This section head is also a keen and capable administrator, and he in his turn, in appraising his foremen and others, proceeded to mark their appraisals in a similar way. At each of their interviews he stressed the need for further effort and success in cost control. The section head, with a twinkle in his eyes, informed the writer that the senior operating officer is now well pleased with the result.

Supplementing Formal Training

Another case demonstrates how, in the field of human relations, performance appraisals can effect improvement that formal training could not. One supervisor was assigned to leading groups of supervisors in "how to handle subordinates" or "job relations" training. He led such groups in this training for a year or so before he was promoted to other work. When he was appraised it was recorded that his major weakness was in handling others. At his interview he was told this, and, ambitious and capable person that he is, he did something about it. His superintendent was able to report a few weeks after the interview that the weakness had been rectified.

An ounce of supervisory guidance was certainly worth volumes of theory in this instance.

And as an indication of what all this is beginning to mean to management, a senior traffic officer made these comments to a personnel assistant who is concerned with the staff work of performance appraisals:

"Performance appraisals have certainly made the younger ones sit up in a big way and go all out for self-improvement. They feel that this is a chance for advancement they never had before. But," he added, "you must never let this program fail, as too many hopes have been built on it. If this thing were to die out it would be a severe blow to our morale."

And in talking of one of his immediate subordinates:

"Since his appraisal he has improved tremendously and, whereas previously I had doubts whether he could succeed me, now I know he would be a good man in my place. He had not realized before that his few weaknesses could have held him back."

As another indication, the chief assistant to an executive operating officer jokingly told the writer:

"This performance appraisal program is becoming a bit of a nuisance. The boss rings his bell half a dozen times a day for performance appraisal records of someone or another. Since he got hold of these records he never makes a decision about promotions or transfers without going through the particular records concerned."

Performance appraisals in CNR already have been completed for the majority of officers and other supervisors and the procedure is now firmly established as part of management practice. Supervisors and their subordinates, from executive officers downwards, have welcomed the program. All of them recognize that it helps for efficiency. The next part of the program—putting to work the great amount of useful information now on record about CNR's management and supervisory team—is already under way. When it is in full sail there is going to be a better and happier CNR staff, and a more satisfied traveling and shipping public.

Here's How to Reclaim

When taking up excess trackage following CTC installations, the Delaware & Hudson is screening and loading the ballast at a cost substantially below that of new material

Crushed stone ballast from unneeded tracks can be cleaned and recovered at a cost substantially less than that of new ballast. This fact has been demonstrated on a number of roads, including the Delaware & Hudson. As a result of special methods and equipment devised on that road the total cost of cleaning and loading stone has been reduced to an average of 48 cents per ton, which represents a considerable saving compared with the cost of new stone, which is $1.25 per ton.

During the past two or three years the D&H has abandoned approximately 47 miles of main-line track, unneeded after CTC installations. Of this trackage 37 miles were stone-ballasted in the years 1933 to 1952 with a very hard stone, a by-product of iron mines on the road's property. The track abandoned represented two types of fastenings—tie plates with M&L spring steel clips and hold-down screw spikes, and the standard cut-spike construction.

How Track Was Taken Up

The procedure for taking up track on which the rails were held by cut spikes was to disconnect the rail at the joints by nut-runners and to remove the spikes, using Nordberg and Fairmont spike removers. The rail was then picked up by a crane carried by a work train on the adjacent track. In some cases the rail was relatively new and could be used for main-line replacement at other locations.

The majority of the tracks abandoned were built with the M&L spring steel clip construction and a different method naturally had to be used to reclaim this rail. The individual joints were removed by nut-runners, and the hold-down screw spikes in the tie plates were removed by Raco screw-spike machines. In the recovery of rail for relaying, the tie plates and clips were left intact on the rail, as it was found this was the most practical and economical way to handle them. When the rail was relaid at the new point of use, it was found to be an easy job to shift the tie plates and clips to conform with the tie spacing.

After the rail and fastenings had been taken up from the track to be removed, the ties were carefully inspected and marked as scrap, yard relays or main-line relays. The scrap ties were pulled out, piled and burned on the site in small quantities. The yard and main-line relay ties were then removed by a bulldozer equipped with a tie-lifting fork attached to the front. The relay ties were then sorted and loaded out for use at various locations.

Considerable thought and study were given to the procedure for recovering the stone ballast, which varied in

Old Ballast

depth from 7 to 14 in., except on some curves where it was deeper. As some of the stone ballast was installed as far back as 1933, it was found to be fouled with stack ash, requiring that it be screened before being used. At other locations the ballast was only a few years old and needed no cleaning. Consequently it could be loaded out directly.

To facilitate screening and loading the old ballast, it was necessary to place it in windrows. In this operation either a Jordan spreader or a bulldozer was used to form the shoulder on the adjacent track. A bulldozer was also used to shape the windrow on the field side of the abandoned track. The windrow was so located that the loading machine would be clear of traffic and at the right location for placing the ballast in the cars of a work train on the adjacent track.

Where it was unnecessary to clean the ballast a Barber-Greene No. 582 bucket loader was used to load the ballast directly into cars. For cleaning the ballast that had been fouled through years of use a screening machine was built. It consisted of a Telsmith double-deck vibrating screen erected on a separate carriage that could be towed behind the bucket loader. The screening machine was designed to retain stone ½ in. or more in size and to deposit it in a windrow at the rear of the cleaner; cinders and fines were screened out and carried off to the sides. The ballast cleaner was capable of handling the capacity of the bucket loader.

The photographs showing the loader and the ballast cleaner were taken when the screener was first put into operation and do not show later improvements, such as enclosing the sides below the vibrating screen to retain the large amount of dust originating in ballast-cleaning work. Also a scraper blade was attached to the rear of the ballast cleaner for spreading dirt removed from the stone. After the final improvements were made on the ballast-cleaning machine only two men were needed for the operation.

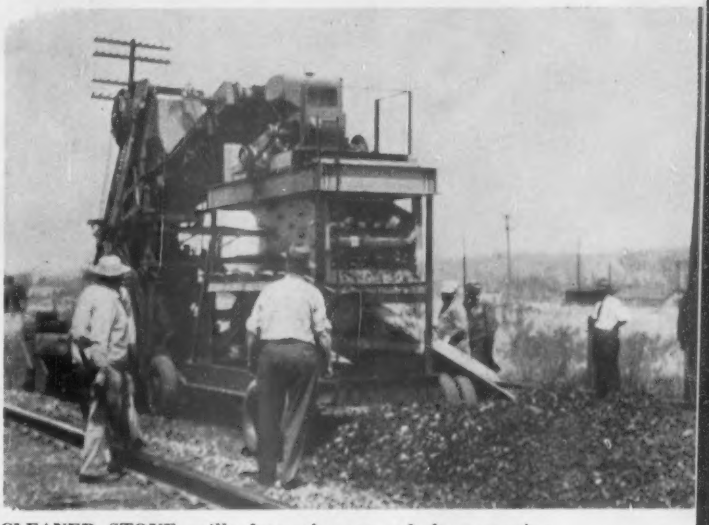
The average production of the ballast-cleaning work was about 1,100 ft per day. It was estimated that the windrow contained from one-half to one-third yards per running foot, depending on the depth of the ballast. The average cost for cleaning the stone was 10 cents per ton.

After a considerable quantity of stone was cleaned, the screener was set aside, and the bucket loader then loaded the clean stone directly into railroad cars. An average of 12 to 16 cars per day were loaded, depending on the amount of traffic on the adjoining track. During 1955 the road reclaimed approximately 1,062 cars of stone, including both screened and unscreened material.

Cost studies show that the average cost of loading the stone was 23 cents per ton. Considering all charges, such as cost of work train with work-train foreman, machine operator and helpers, and amortization of the loader and cleaner over a two-year period, the total cost for cleaning and loading stone, as stated, averaged 48 cents per ton.

The method used in reclaiming the stone ballast was worked out through the cooperation of J. W. Cummings, supervisor of work equipment, and W. E. Bailey, engineer of track, under the supervision of O. W. Stephens, engineer maintenance of way.

BUCKET LOADER picking up the windrowed ballast and delivering it to the screening machine in the rear.

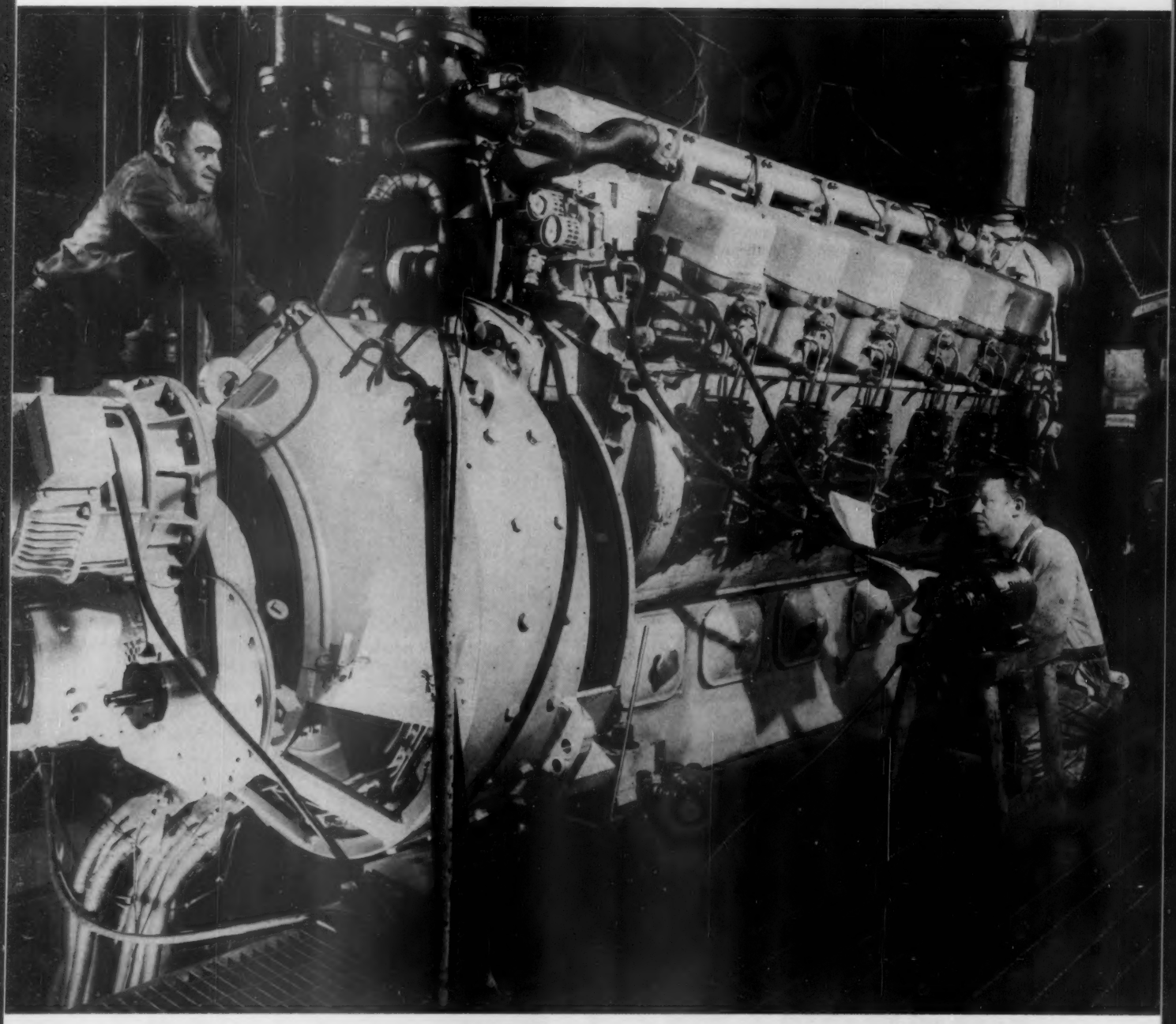


CLEANED STONE spills from the rear of the screening machine, while cinders and other fines are being discharged from the opposite side.

CROSSTIES were uprooted by a crawler tractor with special tie-lifting forks fastened to the front end.

WITH ALCO'S NEW "V" ENGINE . . .

Road Switcher Power Goes Up



ALCO 251 engines undergo a minimum of nine hours of running on plant test stand. Standard is General Electric generator, excitation equipment and governor.

DL-701 has new control system and with its high hood can be equipped with heating boiler and dynamic braking

The Alco four-motored diesel-electric road switcher, DL-701, is powered with a newly designed 12-cylinder 1,800-hp V-type diesel engine. The engine is the Model 251 which replaces the former standard 244 (rated at 1,600-hp).

The 251 engine eliminates the free-end casing, camshaft idler gears and camshaft casing, water jackets and generator adaptor used in Alco's Model 244 engine. The 251 is turbosupercharged and has an air-intake aftercooler that lowers temperatures in all combustion-affected parts. Working parts in the new engine are totally enclosed to decrease wear, and a new fuel-injection system was designed to be dilution-proof.

To lengthen valve and cylinder head life, there are valve-seat inserts and hardened valve faces. The pistons have "ni-resist" inserts in the upper ring groove, and piston rings are heat treated to match them with the engine's chrome-plated cylinder liners. The cylinder block of the new engine is stronger and heavier than that of previous Alco engines. The 251 V-type has a wider and stronger center main bearing, with serrated fit between all main bearing caps and saddles. Grooveless main and connecting rod bearings increase oil-film thickness. Thrust is absorbed by collars on each side of the center main bearing saddle but these are not part of the bearing shells. The new engine includes a positive-action, mechanical overspeed trip.

Improvements in the basic electrical controls offered in the DL-701 include a greatly simplified engine control with individual push-button start and stop and a simple, two-position engine-control switch with isolation and run positions. In fuel-rate control, the DL-701 governor provides timed rate of fuel advance that offers throttle-cushioned duty on the engine and cleaner exhaust during acceleration, and permits throwing the engine on the line in transit.

Fewer Relays Required

The number of relays has been drastically reduced, leaving only heavy duty, tamper-proof relays where required. The ground relay has a trip signal and reset button accessible in the cab without opening compartment doors. Nearly all amphenol connectors are replaced in the DL-701 by terminal boards, giving improved reliability and saving maintenance time and expense by cutting the number of soldered connections. All wire and cable is insulated with improved, neoprene-jacketed rubber and is installed in wire ducts.

The static excitation system is intended to give high reliability and low maintenance. It contains only one rotating machine, a three-phase alternator with two slip rings and no commutator. This has positive inherent control of horsepower, voltage and tractive force. The system's static control is contained in four dead-front interchangeable panels which may be quickly checked and replaced if defective. Traction motor blowers are mechanically driven from the engine crank shaft.

The DL-701 locomotive has angle-mounted number boxes and flush-mounted classification lights. The weather-tight cab is longer than the previous model's, and has two heaters with fresh-air intakes. Gages are of the dial type and are placed near control locations to permit convenient operation of the locomotive in either direction.

The locomotive has a wheel base of 40-ft 4-in. and a maximum height of 14-ft 6-in. Maximum width is 10-ft 1-5/8-in. and it is 56-ft 11¾-in. long inside the knuckles. The wheel base of each truck is 9-ft 4-in. and truck wheels are 40-in. in diameter. Roller-bearing trucks and rubber draft gears are standard equipment on the DL-701. The locomotive's base weight is 240,000 lb and it can be ballasted to 260,000 lb.

Among modifications available to meet customer specifications are gear ratios providing four choices of speed and tractive force. A high capacity dynamic brake system is automatically controlled by non-moving devices and has a new blower motor circuit.

Three steam generators are available for the DL-701, with individual capacities of 1,600, 2,750 or 3,500 lb per hr. Generator water capacity is 1,400 gal. Fuel capacity can be 2,600 gal. when a boiler is not used.

DATA ON THE DL-701

Gearing	74:18	65:18	64:19	62:21
Continuous tractive force (lb)	53,000	46,500	43,400	38,000
Maximum speed, mph	65	75	80	92
Maximum curvature hauling train	30 Degrees			

HIGH-HOODED road switcher, the Alco DL-701, has space for both dynamic brake equipment and steam generator. This four-motored 1,800-hp unit will be followed by a six-motored version, the DL-702.

DISTANCE FROM CONTROL POINT TO INTERLOCKING is no longer a factor due to use of high-speed multiplex code and microwave.

One Machine for 9 Interlockings

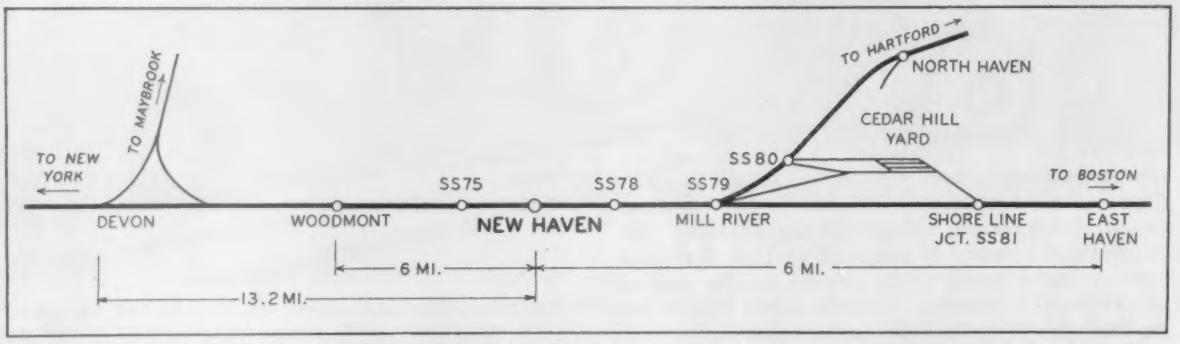
At New Haven largest project of its kind is now 75% completed—Plans are under way for signaling both ways on both tracks, with microwave code transmission, between New Haven and Boston

Twelve operators will be able to do the work of forty-six when the New Haven completes modernization of its interlocking installation at New Haven, Conn. One push-button route-control machine will control nine interlockings, totaling 47 single switches, 58 crossovers, 70 home signals and 155 dwarf signals. This set-up will replace seven separate interlockings and switchmen at two layouts of hand-thrown switches.

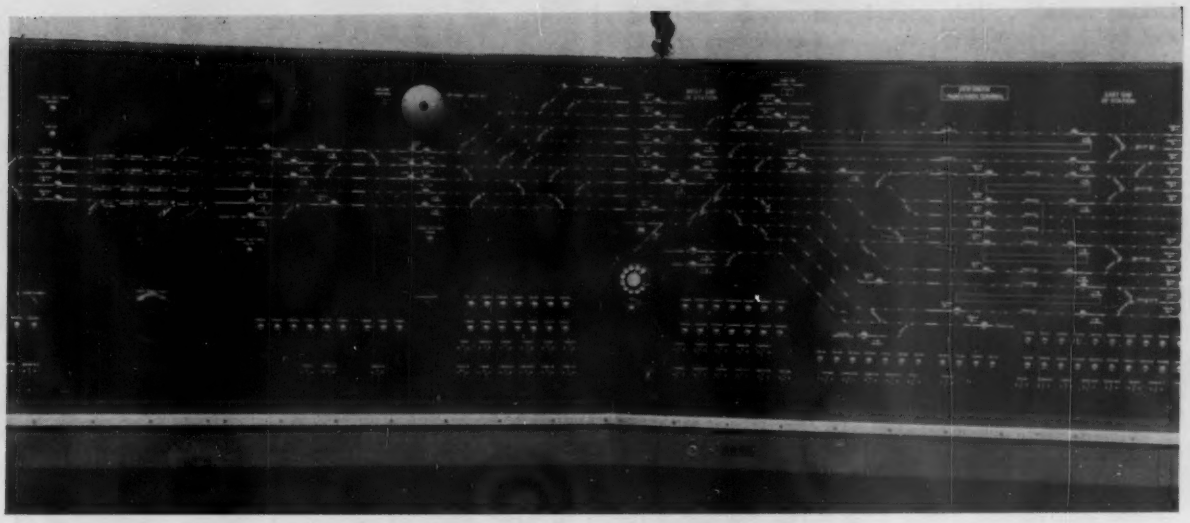
Four new interlockings are already in operation, and the control of five others, involving territory extending some 10 miles each way from New Haven, will be concentrated in the single machine. When the new installation is completed it is expected that a total of 12 operator positions will be adequate to perform the work now requiring 33 tricks, or 46 operator positions on a 40-hour week basis. In addition, better planning and coordination of train movements should be possible with controls centralized.

As stated by W. A. Ford, chief signal officer of the New Haven, "Our preliminary investigation and our experience of several months with the more dense area of the consolidation in service, is that, with the push-button, route-control system, and complete indications on the machine, there is virtually no limitation of the extent of territory which can be controlled from one single station. The limiting factor in such consolidation is rather that of determining whether the area to be controlled constitutes a reasonable grouping of related operations which can effectively be controlled from one point.

"On the technical side, we know that the use of multi-channel code apparatus (for transmitting controls and returning indications) has so greatly broadened the field for consolidating interlockings, that distance from the control point is no longer a factor. In our New Haven area, these coded line circuits are on wires on the pole line or in cables. However, our plans for extending the system eastward to Boston, 157 miles, with new



NINE INTERLOCKINGS WITHIN A RANGE OF 10 MILES of New Haven will be controlled from one push button machine.



MANIPULATION OF CONTROL MACHINE is simple and fast; just push two buttons to establish a route in five seconds, regardless of distance or number of switches.

signaling for train movements both ways on both tracks, includes the use of microwave, thereby avoiding failures due to hurricane damage to pole lines."

The daily traffic through New Haven includes 50 freight trains, 70 through passenger trains, and 30 passenger trains that originate or terminate at New Haven. Electric locomotives are used on the four-track electrified main line between New York and New Haven, and diesel locomotives are used east of New Haven. Locomotives on passenger trains are changed during the station stop. Ordinarily, westbound freights pass through the New Haven passenger station area on track No. 1, and the eastbound freights on track No. 2, no platforms being located on either side of these tracks.

A conservative count, for the four consolidated interlockings in service, shows about 1,600 interlocking line-ups daily for switching moves which, added to the 150 regular trains, makes a total of about 1,750 line-ups daily on the new interlocking machine in the New Haven area.

Large Interlockings Included

Ten tracks extend through the passenger station area, converging to four main tracks going west toward New York. Formerly in this area, there was an 80-lever mechanical interlocking, S.S.75, which has been replaced with electric switch machines and searchlight signals, a total of 14 single switches, 16 crossovers, 2 slip switches and 53 home signals. At the east end of the station area, 14 hand-throw switch stands were in service on single switches and crossovers connecting to "relay" tracks which are used to change locomotives. As part of the new project, electric switch machines and searchlight home signals were installed in this area.

The ten station tracks converge to four tracks just east of the station. Switches and signals in this area, and further east, were previously in a 53-lever electric interlocking known as Fair Street, S.S.78. The old switch machines and signals in this interlocking were replaced, a total of 47 switch machines and 46 home signals being involved. At Woodmont, 6 miles west of New Haven, five crossovers between main tracks (with provision for a sixth) are used to route trains to and from the station area to the assigned tracks. Formerly these crossovers were in a 28-lever mechanical interlocking. The mechanical plant was removed, new electric switch machines and new signals being installed.

Five More Layouts

Five more interlockings now under construction will also be included in this consolidated control system. At S.S.79, Mill River Jct., 5,280 ft east of New Haven station, the four main-line tracks diverge into 6 tracks; 2 tracks east to Providence and Boston on the Shore line; one track for through freights to Cedar Hill classification yard; and three tracks to S.S.80, where a double-track line diverges to Hartford and Springfield. At S.S.79, there is, at present, a 52-lever mechanical interlocking machine controlling both electric and mechanical functions, including three single switches, 8 crossovers and 40 home signals. The track layout will be modified and will have 4 single switches, 7 crossovers and 36 signals.

At Air Line Jct., S.S.80, 2.3 miles east of the control station, there is a 24-lever electromechanical machine. This is the westbound exit from Cedar Hill classification yard. Switches and signals for leaving trains are controlled, as well as crossovers and signals on the Hartford line. This interlocking includes 3 single switches, 3 crossovers and 13 signals. This track layout will be modified, and will include 5 single switches, 4 crossovers and 15 signals. At North Haven Jct., 7 miles north of the control station, which is both the exit and entrance for freight to Cedar Hill classification yard on the Hartford line, there is a group of 2 single switches and 1 crossover, all hand-thrown. These will be operated from the control station.

At Shore Line Jct., 3 miles east of the control station on the Shore line, which is the entrance and exit for freight to the Cedar Hill classification yard, there is a layout of 3 single switches and one crossover with 16 electric signals operated by a 24-lever mechanical inter-

locking machine. This track layout will be modified, and will include 3 single switches, 2 crossovers and 11 signals. At Branford, 9.4 miles from the control station, also on the Shore Line, there is a 16-lever mechanical interlocking machine which controls 2 single switches, 2 crossovers and 8 signals. New power switch machines and signals with new local circuits are to be installed at these five layouts.

Why Remote Control Is Possible

The new construction at each of the four layouts—S.S.73; S.S.75; S.S.77; and S.S.78—includes a completely new system of local circuits and arrangements for consolidated control from the new pushbutton UR route-control interlocking machine in a brick building on the north side of the track about 100 ft west of the passenger station. Direct-wire remote control and indication circuits are used at S.S.75; east end of the passenger station S.S.77; and S.S.78 Fair Street. Multiple high-speed code is used between the control tower and Woodmont, and will also be used for the five interlocking locations east of S.S.78.

The multiplex system used between the New Haven control office and Woodmont has capacity to control 48 functions, and to indicate 96 functions, concurrently, in 1½ seconds. This system uses five wires between the control tower and Woodmont. The code system for North Haven and Branford will also be the multiplex type, operated over a two-wire line circuit by four separate and distinct carrier frequencies.

The new control machine is made up of four sections, joined together in a semicircle, to give the train director, who is located approximately 10 ft in front of the machine, full view of the territory under control.

On the panel, on the line representing each track, and at the location corresponding with each home signal, there is a pushbutton which represents that signal. The manipulation for UR operation is simple. Only two pushbuttons, one at the entering signal, the other at the opposing signal, which are located in the track diagram, need to be operated in sequence to set up a route and clear a signal. No manipulation of individual switch levers is normally required.

When the entering route button is pressed, a red light appears at the button, thereby marking the entrance to the route and indicating that a route has been initiated. The operation of the second button (at one of the indicated destinations) completes the route selection. A flashing-red light appears at each switch section when its switch is not positioned for the route, and this indicates that the switch is in transit. When the flashing red changes to a steady white light, a switch is in the desired position. When all switches are properly positioned, the complete route is shown by a white line of light from entrance to exit. The signal indication lamp will then change from red to green when the wayside signal clears. The route is established and the signal-clear indication is received on the panel in approximately 5 seconds.

These interlocking consolidation projects were planned and are being constructed by the New Haven signal forces, the principal items of equipment and engineering being furnished by the Union Switch & Signal Division of Westinghouse Air Brake Company.

Who Makes Up

By JAMES E. PARKS,*
Assistant Professor of Research
in Business Administration,
Harvard Business School

A serious question about the magnitude and importance of the "passenger deficit" of the railroads is this: What *is* the effect of federal income taxes? An even more serious question—but one not treated in detail in this paper—is: Just how much is the deficit?

The determination of the approximate size of the deficit on any individual railroad is a difficult and complex problem in cost accounting which most railroads have not tackled with the skill and technique required to provide reasonably accurate answers. Investigation of the limited data available indicates that, on a large majority (if not all) major Class I railroads, passenger train service revenues are not adequate to cover the long-run additional costs of providing these services.

Applying "Rule of Thumb"

The cost separation formula prescribed by the ICC results in a national passenger deficit currently running at about $650 million annually. Most practical railroad executives believe this figure is substantially in excess of the amount by which railroad net income before taxes could be increased if all passenger and allied services were to be discontinued. A not uncommon rule-of-thumb used on individual railroads is that about half of the reported deficit is an actual loss; i.e., that net income before taxes would be increased by only about half of the amount of the deficit if passenger train services could be eliminated. For example, in the 1952 annual report to the stockholders of the New York Central, William White, then president, wrote as follows:

"Continuing as a heavy burden on the company's earnings is the deficit from passenger train operations. According to the formula of the ICC, the passenger deficit in 1952 was $50,621,758. . . . While the deficit . . . does not represent the amount of money that would be saved if all passenger service were discontinued, we nevertheless estimate that the actual out-of-pocket deficit for 1952 was in the neighborhood of $25,000,000, more or less."

The remainder of this paper is concerned with the "actual loss" in the sense that Mr. White used the term, and ignores the important cost accounting problem of determining the magnitude of the actual loss.

During the course of an extensive program of interviews with railroad executives in connection with a study of marketing railroad passenger service, it became apparent to the writer that there exists a wide divergence of opinion among railroad executives as to the effect of federal income taxes on the magnitude of the actual passenger loss and on the freight business.

Executives of several major railroads expressed the

*Professor Parks has been engaged for many months on an extended research project dealing with several aspects of the railroads' passenger problem.

Passenger Losses?

Is it true that the actual loss, whatever it may be, is halved because income taxes fix it so that "Uncle Sam picks up half the tab"?

opinion that the "real burden" of the passenger business on the freight business and/or on corporate net income was only half of the amount of the actual loss, due to the effect of federal income tax. (The actual tax rate is 52%, but for simplicity a 50% figure is used in this article.) Executives of at least three railroads challenged this viewpoint on the grounds that it represents wishful, unrealistic, short-run thinking. Others were equally certain that their reasoning to the effect that, "Uncle Sam picks up half the tab for passenger losses"—due to the reduction in federal income taxes arising out of such losses—is the correct way of looking at the situation.

The case for the "after income tax" philosophy has been ably stated by Loyd J. Kiernan, formerly manager of special studies, Association of American Railroads, and until his recent retirement executive vice-president of the Boston & Maine. In a paper delivered before the Kansas City Passenger Agents Association, February 7, 1955, Mr. Kiernan said:

"Another aspect of the $705 million deficit which is usually overlooked is that at its very worst the so-called deficit would be borne by the railroads only to the extent of 48 per cent. Taking it at face value, this deficit is by definition a deduction from income taxes payable on earnings from other service. In other words, the deficit is *before* income taxes. If, for example, there is income from freight service of $1,000 million and a deficit from passenger service of $700 million, the 52% income tax on the freight service, or $520 million, would be reduced by $364 million an account of the passenger-service deficit. Thus, the income tax payable by the railroad would be only $156 million, instead of the $520 million payable on the freight earnings alone. This means that the *net* passenger deficit in 1953 after allowance for income taxes was $338 million, instead of the $705 million usually cited. At its very worst, any deficit can only affect railroad net income to the extent of half its face amount, after making allowance for income tax."

From the viewpoint of assessing the importance of the passenger deficit in terms of how much it reduces net profits after taxes, Mr. Kiernan's approach is a valid one.

The difficulty arises from the extension of this type of reasoning to state, as several executives have done, that *the "burden" on the freight business* is only one-half of the actual passenger loss. From a practical point of view, it would appear that there is a major difference between the burden of passenger losses on the *owners* of railroads, and on the *freight* business; and that the amount of the actual burden is dependent upon whether it is absorbed by the freight business or passed on to the owners of the railroad.

Railroads Face Increased Deficit

This concept can best be illustrated by examining the effect of a change in the actual passenger loss on a particular railroad. With the recent increases in railroad wages, and the relative stability or decline in passenger revenues, it appears likely that many roads will face an increase in their actual deficit this year, Consider the following situation which, although hypothetical, is believed to typify the situation confronting many railroads this year:

If the imaginary Great Central Western Railroad has 3,000,000 shares of stock outstanding and it has an established dividend policy of paying $2 a share and wishes to continue this rate, an annual need is created for net-after-tax profits of $6 million. In addition, the opportunities for profitable investment are such that the company needs and has made plans for an annual program of investment in new and improved facilities calling for another $6 million of profits to be retained in the business. Thus it needs and has planned on after-tax-profits of at least $12 million annually.* In the past it has been able to obtain this objective by earning before-tax profits from the freight business of $30 million. which has been reduced to a corporate, before-tax profit of $24 million, by virtue of an actual loss of $6 million from passenger train operations, and to $12 million by federal income taxes. In 1955 it became evident that passenger revenues would drop by about $1 million and that passenger service expenses would be up by $1 million—resulting in a projected increase in the size of the real passenger service deficit of $2 million.

Proponents of the "after-tax" philosophy would main-

(Continued on page 32)

If you're considering the "passenger deficit" from the standpoint of its effect on stockholders—says Professor Parks—then it's all right to cut the loss figure in half. But, if you are expecting your service to freight patrons to absorb the loss (i.e., instead of passing it on to your stockholders), then it isn't correct to make any deduction to allow for reduced income taxes.

Professor Parks also says that some railroads think of some expenses from a before-tax viewpoint—and some from an after-tax attitude. This inconsistency invites confusion of thought which may be a temptation toward conclusions which are economically erroneous.

*Profits are not the only source of funds for dividends and investment. However, the long continued, widespread differentials between the return on equity capital invested in railroads as compared with alternative uses for such capital in other industries has frozen most railroads out of the equity capital markets, forcing them to rely on retained earnings and borrowing for their capital needs.

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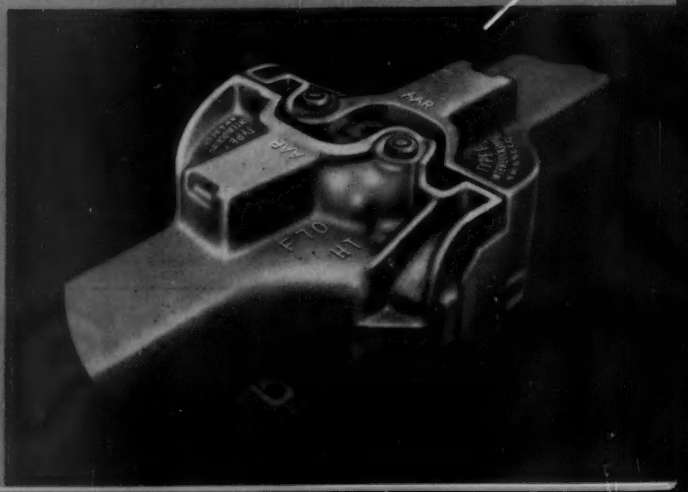


MISSOURI-KANSAS-TEXAS RAILROAD COMPANY

D. V. FRASER
PRESIDENT

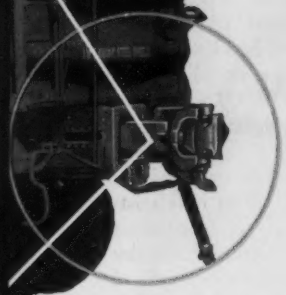
RAILWAY EXCHANGE
SAINT LOUIS 1, MO.

The Katy's recent order for 550 freight cars equipped with the new Type F Interlocking Coupler marks our first large-lot order with Type F Couplers specified.

The Type F Coupler meets all the rigid requirements established by the Association of American Railroads' Committee on Couplers and Draft Gears. We found that, in addition to increased strength, it reduced slack between cars and lessened the possibility of jackknifing. It also prevents the mating coupler from falling to track in case of pull-out, thus avoiding derailments.

We specified the Type F Coupler because we think its superior safety features will increase operating efficiency and reduce costly breaks-in-two of our freight trains.

Donald V Bacon



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"If the $2 million increase in the passenger deficit can be passed along to the owner, its burden is only $1 million, but if it must be offset by changes in the freight business, then its real burden on that service is the full $2 million."

(Continued from page 29)

tain that the extra burden thrown on the freight business by this $2 million increment in passenger losses really amounted to only $1 million since "Uncle Sam would pay half of the extra loss" in the form of reduced corporate income taxes. However, the GCW has plans which call for after-tax profits of $12 million and, in the absence of some offsetting change in the net from freight operations, the increase in the passenger loss will mean that it will have only $11 million to meet these requirements for after-tax profits. Thus it would appear that some action must be taken which either brings in $2 million extra freight revenue (increased rates, more business, etc.) or which cuts freight expenses by $2 million—or a combination of both—which will improve net before-tax profits from freight services by $2 million.

From this point of view, it is obvious that *the real burden on the freight business* is the before-tax increase in the size of the passenger deficit, or the full $2 million. On the other hand—if the railroad is in the position where it feels that it can reduce its needs for after-tax profits, either by cutting dividend payments by $1 million, or by cutting back on programs requiring new investment of retained profits by $1 million—then it is clear that the real loss to the owners of the road amounts to only $1 million.

In summary, reasoning to the effect that "the burden" of the passenger business on the freight business is only one-half of the actual losses from passenger service due to the effect of income taxes is inappropriate. On the other hand, it is certainly appropriate to reason that the "burden" of the passenger business on the owners of railroads is only about one-half of the actual losses from passenger operations. Thus, if the $2 million increase in the passenger deficit can be passed along to the owner, its "burden" is only $1 million; but if it must be offset by changes in the freight business, then its "real burden" on that service is the full $2 million.

"Before" or "After" Taxes

In assessing the actual effect of past deficits or contemplating the effect of future changes in the deficit, the proper philosophy (i.e., before or after tax) must depend upon the situation of the individual road and its plans for the future. If management can safely pass the increased loss on to its owners, it can subscribe to "after-tax" thinking; but, if the change in the deficit must be absorbed by the freight business, then it must use "before-tax" thinking.

Since the net profits of most railroads are far below any generally accepted criterion of a "fair rate of return" to their owners, and since there are rapidly increasing pressures for new investments and higher dividends, it would appear that the number of roads in the position to pass increased passenger deficits on to their stockholders is extremely limited. Thus few roads can afford the alluring proposition of "after-tax" in relation to increased passenger losses.

Effects on Expenditures and Investments

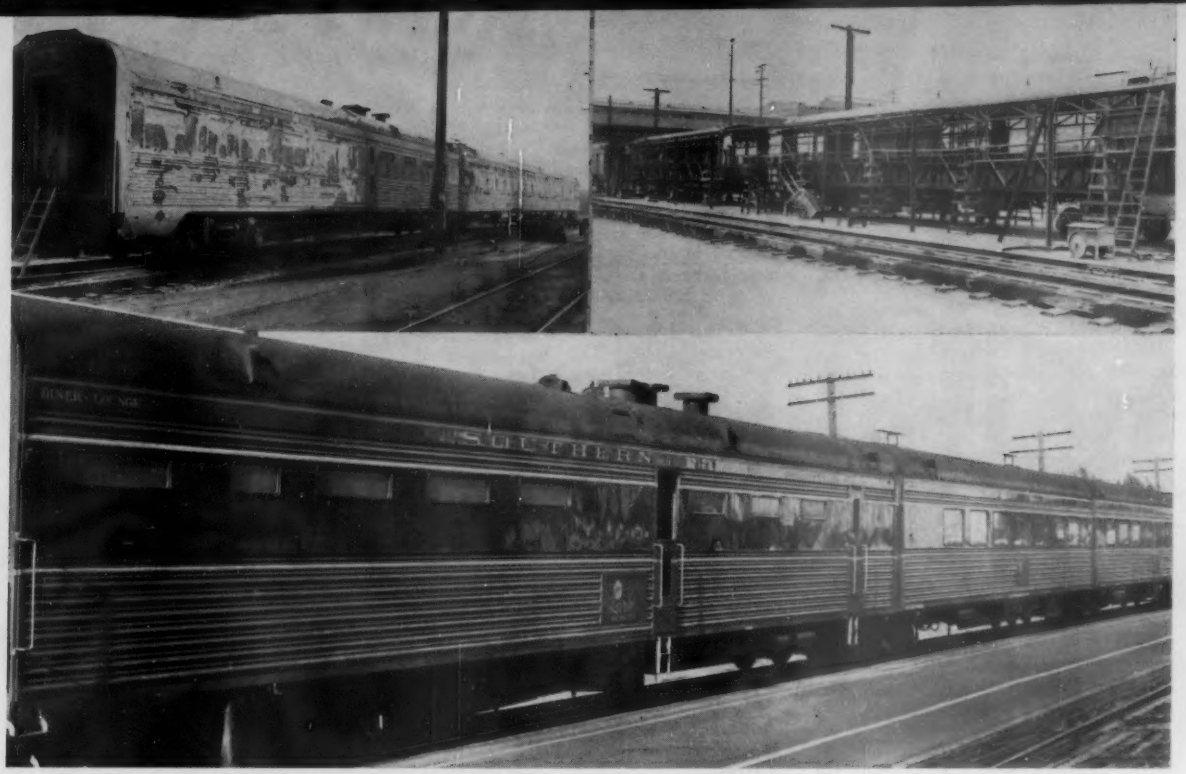
Perhaps an even more serious limitation to "after-tax" reasoning is to be found in its possible effects on expenditure and investment patterns within individual roads. There would be no problem here if all executives of a particular railroad adopted a uniform practice of considering each item of expense from a viewpoint of (1) the effect on net income after taxes; or (2) the effect on net income after taxes. But a real problem arises when "after-tax" thinking is applied to some kinds of expenditures, while "before-tax" thinking is applied to others. For example, the hypothetical GCW operates one passenger train on a short branch line and incurs an actual loss of, say, $10,000 before taxes from the service. In thinking about the desirability of continuing this train, Central Western's executives reason to the effect that, "Oh, well, Uncle Sam is paying half of the loss so I suppose the train is worth $5,000 to us to prevent the ill-will which might result from its elimination."

Assume that GCW executives are also considering the addition of one freight traffic salesman whose total salary and expenses (including overhead) will amount to $10,000. Or they may be thinking of building a new access line to an industrial development tract which will involve annual carrying charges of $10,000. Or they may be considering an additional freight advertising appropriation of $10,000.

If Central Western's officers are going to think of the cost of maintaining a train losing $10,000 as only costing $5,000, due to reduction in income tax, they must also reduce the attractive alternative expenditures by one-half, before the relative costs of the three methods of securing and/or holding freight business can be properly compared. If the company uses after-tax thinking for passenger service losses, and before-tax thinking for other methods of obtaining and holding freight business, it is clear that the dice are loaded in favor of retaining a losing passenger service as a freight sales instrument, as opposed to other ways of promoting freight service.

Since there are literally thousands of different ways a railroad can spend its money to get or hold business, it would be a very big job to convert all contemplated expenditures to after-tax dollars. It would appear to be dangerous to let the "after-tax philosophy" creep into expenditure or investment decisions, unless the road is prepared to go all the way and shift over to thinking altogether in terms of "50-cent" expense dollars.

"If the company uses after-tax thinking for passenger service losses, and before tax thinking for other methods of obtaining and holding freight business, the dice are loaded in favor of retaining a losing passenger service."



STRIPPING OFF EXTERIOR PAINT, the first step in renovation, was performed by spraying on paint remover, then after 30 min washing with water. Side sheathing was then removed so parts could be replaced.

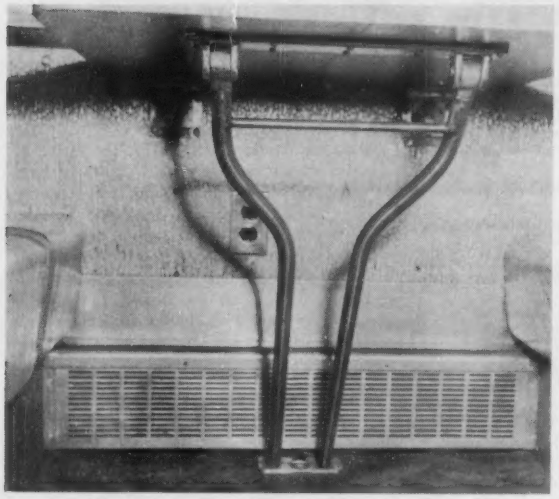


TABLE LEGS ARE BRACKETED to the floor area near the grill to give passengers added leg room.

Rebuilding Improves Decor, Cuts Upkeep

Two triple-unit kitchen-diner-lounge cars put in service on the Southern Pacific's overnight "Lark" in 1941 were recently rebuilt and redecorated by the road's Los Angeles shops. Originally constructed by Pullman-Standard of Cor-Ten steel, with painted stainless steel side sheathing, the cars had been shopped at two-year intervals, but after 14 years steady use some structural improvements were required.

As many of the original interior finish materials were no longer available, a completely new and modern inside design and finish were developed, resulting in greater passenger appeal and substantially reduced maintenance and cleaning costs.

WALLS OF CLOSELY GRAINED WOOD and copperized steel make the setting for handcrafted furnishings.

NEW DECORATIVE TREATMENT, developed in consultation with the car builder, cost about $9,500 per car set.

(Continued from page 15)
tition for dismissal denied. The commission's dismissal order denied these motions.

Baltimore & Ohio.—*Offers Debentures for Income Bonds.*—This road has asked the ICC for authority to issue $54,710,000 of convertible 4½% debentures to be exchanged for a like amount of outstanding convertible 4½% income bonds. The road said the offer would restore to holders of the bonds fixed payment status of interest accomplished for other issues in last year's $350,000,000 refinancing plan. The debentures would bear fixed interest from January 1, 1956, payable semiannually, and are due January 1, 2010.

Butte, Anaconda & Pacific.—*Acquisition.*—This road has applied to the ICC for authority to purchase, from the Northern Pacific, a 6.9-mile line from Stuart, Mont., to Anaconda. The price would be $81,411.

Delaware, Lackawanna & Western.—*To Distribute NKP Stock.*—In lieu of a cash dividend, the DL&W on July 2 will distribute to its stockholders a part of its holdings of Nickel Plate common stock. One NKP share will be distributed for each 33 1/3 shares of DL&W stock, which will reduce the latter's holdings of 363,000 NKP shares by about 50,000 shares.

Maine Central.—*Promissory Notes.*—The ICC has exempted this road from competitive bidding requirements for a contemplated issue of $1,300,000 of promissory notes to be used in redemption of its prior preference stock (*Railway Age*, January 30, page 16.) The commission withheld action on the road's application for authority to issue the notes.

New York, New Haven & Hartford.—*Bonds of Providence Terminal.*—This road has asked the ICC to approve a two-year extension, from next March 1 to March 1, 1958, of the maturity date of $3,564,000 of Providence Terminal Company first mortgage bonds. The bonds, now having a 4% interest rate, would be extended on a 4½% basis.

Northern Pacific.—*Stock Split.*—This road has applied to the ICC for authority to effect a two-for-one split of its common stock. The plan would involve increasing the number of authorized shares from 2,600,000 of no-par value to 5,200,000 of $5 par.

Pennsylvania.—*Mergers of Subsidiaries.*—The ICC has approved merger of the Elmira & Lake Ontario into the Northern Central, and of the Delaware, Maryland & Virginia into the Philadelphia, Baltimore & Washington (*Railway Age*, December 12, 1955, page 15). The PRR, controlling the NC and PB&W, thus acquires direct control of the two roads to be absorbed.

Union Pacific.—*Stock Split Approved.*—The ICC has authorized this road to issue $321,834,100 of capital stock to effect a five-for-one split of its common and preferred stocks (*Railway Age*, December 26, 1955, page 16). Of the 32,183,410 shares to be issued, 9,954,310 will be preferred shares and 22,229,100 will be common shares.

Dividends Declared

BOSTON & ALBANY.—$2, payable March 31 to holders of record February 29.

CHICAGO, MILWAUKEE & ST. PAUL & PACIFIC.—Series A preferred $5, payable out of 1955 earnings March 9 to holders of record February 18.

CHICAGO, ROCK ISLAND & PACIFIC.—new common, 67½c, initial quarterly, payable March 31 to holders of record March 12.

DELAWARE & BOUND BROOK.—50c, quarterly, paid February 20 to holders of record February 13.

ERIE & KALAMAZOO.—$1.50, paid February 15 to holders of record January 31.

ERIE & PITTSBURGH.—87½¢, quarterly, payable March 12 to holders of record February 29.

KALAMAZOO, ALLEGAN & GRAND RAPIDS.—$2.90, semiannual, payable April 1 to holders of record March 15.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—50c, semiannual; 25c, extra; both payable March 30 to holders of record March 12.

NORFOLK SOUTHERN.—30c, quarterly, payable March 15 to holders of record March 1.

NORTH PENN.—$1, quarterly, paid February 25 to holders of record February 17.

ST. LOUIS-SAN FRANCISCO.—common, 50¢, increased, payable March 15 to holders of record March 1; 5% preferred, $1.25, quarterly, payable March 15, June 15, September 15 and December 15 to holders of record March 1, June 1, September 1 and December 1.

ST. LOUIS SOUTHWESTERN.—5% non-cumulative preferred, $5, annual, payable March 2 to holders of record February 23.

SOUTHERN PACIFIC.—75c, quarterly, payable March 19 to holders of record February 27.

VIRGINIAN.—75c, quarterly, payable March 12 to holders of record February 27.

WABASH.—preferred, $4.50, payable April 20 ot holders of record March 30.

Organizations

New officers of the **Lincoln, Neb., Traffic Club** are: President, Neil Nelson, Peterson & Peterson, Inc.; vice-president, Jack Cunningham, Union Pacific; secretary-treasurer, L. B. McPherson, UP.

Newly elected officers of the **Railroad General Agents Association** of San Francisco are: President, Lon Breedlove, Chesapeake & Ohio; first vice-president, George P. Schultz, Baltimore & Ohio; second vice-president, Eugene Pry, Pennsylvania; third vice-president, Ralph McGlothlen, Cotton Belt; secretary, James J. Harr, Southern Pacific; treasurer, Carl Ahlgren, Chicago & Eastern Illinois; sergeant-at-arms, W. F. Schnaak, Indiana Harbor Belt.

A sales seminar for the transportation industry on "How to Sell Transportation," to be conducted by the **Traffic Managers' Institute** at 154 Nassau Street, New York, will have its first session March 12. A panel of sales executives from all types of carriers, as well as industrial traffic managers, will participate. Included will be Henry A. Wilson, Jr., general eastern freight agent of the Erie. The seminar, scheduled as 16 weekly sessions, is open to persons employed in a sales capacity, or with basic experience in traffic and transportation.

The **Wyoming Valley Traffic Club** will hold its annual Railroad Night March 7, with a dinner in the Hotel Jermyn, Scranton, Pa., at 7 p.m. L. J. Burgott, assistant freight traffic manager, Erie, will be the speaker; his subject—"What Does the President's Cabinet Report Mean to You."

New officers of the **Transportation Club of Dallas** are Paul J. Chitwood, Ford Motor Company, president; O. B. Sandige, general agent, Fort Worth & Denver, first vice-president; M. E. Cookston, C & H Transportation Company, second vice-president; Henry G. Nelson ,traveling freight agent, Wabash, secretary-treasurer.

The 12th annual reunion of the **No Work—No Worry Club** will be held March 8 at the Grey Gull Inn, Clearwater Beach, Fla. The club, organized by George Hichborn, retired general traffic manager of the United States Rubber Company, is composed of retired industrial traffic executives and railroad officers.

NY RR Club Essay Contest Winners

W. B. Wright, staff assistant-finance, Chesapeake & Ohio, has won first prize of $750 in the New York Railroad Club's annual essay contest.

Mr. Wright's prizewinning paper was entitled "Suggestions for Changes in Rates to Improve Railroad Traffic Volume and Net Earnings, with Contestant's Views on Improving the Competitive Position of Railroads."

Second prize of $500 was awarded to R. E. Neel, assistant instructor, economics department, Ohio State University, for a paper called "A Critical Analysis of the Weeks Report." Third prize for $250, went to Dr. G. Lloyd Wilson, chairman, transportation and public utilities department, University of Pennsylvania for a paper entitled "Should and Can Traditional Differentials in Railroad Freight Rates Be Maintained?"

Contest judges were A. E. Baylis, vice-president, freight sales and service, New York Central; J. W. Oram, vice-president, personnel, Pennsylvania; and W. K. Tate vice-president, freight traffic, New Haven.

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Railway Officers

ATLANTIC COAST LINE.—N. L. Altland, communications engineer, has been appointed assistant chief engineer communication, with headquarters as before at Savannah, Ga. **W. R. Baker,** principal assistant engineer, signaling, at Wilmington, N.C., has been named assistant chief engineer signaling, there. **Carlton Bacon** has been appointed supervisor of signals at Waycross, Ga., and **W. P. Robinson** has been named assistant supervisor of signal construction at Savannah.

BELT OF CHICAGO.—George F. Hallaron has been appointed general agent at Chicago.

BURLINGTON.—F. C. Mitchler, assistant to general superintendent, Communications department, has been appointed assistant general superintendent communications at Chicago.

GULF, MOBILE & OHIO.—William H. Sanders, an assistant attorney general of Alabama for several years, has been appointed a GM&O attorney at Mobile.

James J. Hennessy, division freight agent at Chicago, has retired.

JERSEY CENTRAL. — William E. Federkiel has been named safety supervisor at Jersey City. Mr. Federkiel is chairman of the Brotherhood of Railroad Trainmen's local grievance committee.

LONG ISLAND.—Otto M. Buerger has been appointed general attorney at Pennsylvania Station, New York, to succeed **Lawrence Chaffee,** resigned.

MANUFACTURERS JUNCTION. —G. R. Kronblad, superintendent, has been elected vice-president and general manager, with headquarters as before at Cicero, Ill., succeeding **H. W. Hamilton,** retired.

MISSOURI-KANSAS-TEXAS. — Jay L. Taylor, traveling passenger agent at Kansas City, Mo., has been appointed division passenger agent at Fort Worth, Tex., succeeding **A. W. Herr,** retired.

MISSOURI PACIFIC. — L. W. Martin, road master mechanic at Wichita, Kan., has been transferred to Kansas City, Mo. He succeeds **L. T. Imler,** who has become terminal master mechanic at Kansas City, replacing **A. J. Daniel,** who has moved to Mr. Martin's position at Wichita.

NORFOLK SOUTHERN.—M. C. Jennette has been appointed assistant vice-president at Norfolk, Va., with immediate jurisdiction over engineering, construction and maintenance of way and structures. Mr. Jennette was chief engineer of the NS from October 1947 until he resigned in July 1955.

PENNSYLVANIA. — James M. Black, director of the personnel division, American Management Association, at New York, has been appointed assistant director, personnel administration of the PRR at Philadelphia.

PIEDMONT & NORTHERN.—F. E. Williams, general freight agent, sales, at Charlotte, N.C., has been named general freight agent, with supervision over traffic agencies and their activities. **D. V. Shippey,** assistant general freight agent at Charlotte, has been named assistant general freight agent, sales and service, taking over Mr. Williams former duties. **E. E. Culbreath,** general eastern agent at New York, succeeds Mr. Shippey as assistant general freight agent at Charlotte.

ROCK ISLAND.—Effective March 1, **E. Rigg,** vice-president — freight traffic, has been appointed to the newly created position of vice-president—executive department. **Frank J. Conrad,** general traffic manager of the Great Northern, replaces Mr. Rigg. **L. B. Pritchett,** assistant vice-president, has been named vice-president in charge of the industrial development department.

C. O. Ellis, superintendent of communications, has been appointed general superintendent of communications and signals at Chicago.

SANTA FE. — Fred H. Snyder has been appointed assistant general freight agent at San Francisco, succeeding **J. R. Walter.**

SEABOARD.—G. S. Woodward, district freight agent at West Palm Beach, Fla., has been appointed division freight agent there, with jurisdiction extended to include the Lake Okeechobee area.

SEATRAIN LINES, INC.—Allan A. Seroll, district freight agent at New York, has been promoted to New England freight agent in the newly opened office at 80 Federal street, Boston. **Gerald R. Wenzel,** commercial agent at New Orleans, succeeds Mr. Seroll at New York.

SOUTHERN. — Walter G. Schweinebraten, assistant master mechanic at Birmingham, Ala., has been promoted to master mechanic at Atlanta, Ga., succeeding **Russell L. Turner,** who has been transferred to Meridian, Miss., to replace Henry E. Dyke, retired.

John W. Staley, trainmaster at Knoxville, Tenn., has been promoted to assistant director of labor relations at Washington, D.C. **Thomas H. Porter,** assistant to director of labor relations, has been promoted to assistant director of labor relations, with headquarters remaining at Washington.

YOUNGSTOWN & NORTHERN. —Robert D. Lake has been appointed general superintendent at Youngstown, Ohio, succeeding **Fred H. Pilgrim,** who retired from that position February 1, but will remain with the road in a consulting capacity.

OBITUARY

James E. Hill, 73, recently retired district freight agent of the **Wabash,** died February 15 at Evanston, Ill.

E. Rigg

Frank J. Conrad

L. B. Pritchett

C. O. Ellis

Current Publications

BOOKS

RAILWAY TRACK & STRUCTURES CYCLOPEDIA, Eighth Edition, edited by Merwin H. Dick. 854 pages, illustrations, drawings. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $10 to railroad personnel; $12 to others.

Purpose of the Cyclopedia is to provide an authoritative, up-to-date text and reference book on the best and latest practices, materials, equipment, tools and appliances entering into construction and maintenance of fixed properties of railroads. It is divided into seven sections—general; track; bridge; building; water; oil and sanitation (new); signal and communications; and directory.

Major revisions have been made in this edition. Many entirely new chapters have been introduced; several chapters were consolidated; and a considerable amount of material, no longer considered relevant, was eliminated. Examples of material added are Chapters 15 and 16—the art of track lining and track raising. These contain basic information on work techniques not heretofore included. A large portion of the text has been rewritten, and frequent topic headings in boldface type have been introduced for convenience of readers who seek information on particular subjects.

As in previous editions, the arrangement is such that manufacturers' catalog copy will, for the most part, be found close to related subject matter in the text. Also, a general subject index, a directory of products, a trade-name index and an alphabetical index of manufacturers are provided.

•

TRAINS, TRACKS AND TRAVEL, by T. W. and R. G. Van Metre. Ninth Edition, 501 pages, illustrations. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $4.95.

This is the railroad story through its colorful history from a century and a quarter ago to the latest developments of today, such as communications and control, diesel locomotives, combined rail-car and highway-trailer (piggyback) freight operations, lightweight passenger streamliners, and the vast network of rails that more than any one factor has helped knit our country into the great nation it is today. Mr. Van Metre's son, one of the youngsters for whom the original book was written 30 years ago, is co-author of the latest edition, which is designed to appeal to young and old.

•

ACCIDENT PREVENTION MANUAL FOR INDUSTRIAL OPERATIONS. Third edition. 1341 pages, illustrations, charts, tables. National Safety Council, 425 N. Michigan ave., Chicago 11. $13.50.

Designed as the basic text for the safety man's shelf, this manual in-

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NEW TELEGRAPH EMPLOYS ELECTRICAL NUISANCE
NEW YORK, Feb. 20, 1885 — The phenomenon called induction, which has been, and indeed is now, a great annoyance in the working of telegraph and telephone lines, is being put to practical use by an imaginative device called the Phelps Induction Telegraph. An instance will, perhaps, better illustrate the nature of this phenomenon.
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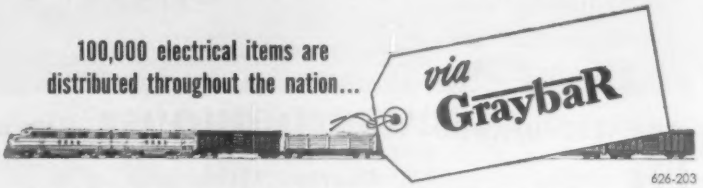

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cludes information needed to organize a comprehensive safety program and keep it going. In addition, there are many informative chapters covering specific types of hazards in most industrial operations. With data on every aspect of industrial accident prevention, the new edition contains 43 sections—17 completely new, and the others extensively revised and brought up to date. The manual tells how to set up safety committees, maintain interest in accident prevention activities and develop favorable publicity and public relations. There are chapters on accident records and injury rates, accident investigation and costs, and workmen's compensation insurance. There is technical information on such subjects as pressure vessels, handling materials, conveyors, machine tools, welding, portable power tools, electrical hazards.

•

THE MACHINIST DICTIONARY, by Fred H. Colvin. 496 pages, illustrations, drawings, tables. Simmons-Boardman Publishing Corporation, 30 Church st., New York 7. $7.50.

This dictionary was compiled to present information about machine terms, parts, and standards in comprehensive form for quick reference. A principal aim was to make readily available information which would avoid confusion from misuse of mechanical terms. Definitions cover the field from "ABC screw threads" to "zirconium." The book is illustrated with photographs and drawings of machines, machine parts, and mechanical components. Typical of dozens of tables are those on Morse tapers, music wire sizes, and linear coefficients of expansion for various materials.

The author spent 40 years writing for *American Machinist* magazine, of which he is now editor emeritus. He is a fellow of the American Society of Mechanical Engineers, and has written over fifty books.

•

FUNDAMENTALS OF TRANSPORTATION ENGINEERING, by Robert G. Hennes and Martin I. Ekse. 520 pages, drawings, charts, tables. McGraw-Hill Book Company, Inc., 330 W. 42nd st., New York 36. $8.50.

The authors have endeavored to present a combined treatment of several types of transportation engineering within one volume, thus catering to a growing trend toward a general coordinated course in transportation engineering. The material in each section is adaptable to design and layout projects for both student and professional engineer concerned with such problems as design of a road to meet standards for given traffic volume and heavy-wheel-load repetitions; planning, design, and layout for a civil airport to standards required for given air transport traffic in a given community; layout of railroad terminal facilities and coordination with other forms of transportation; river training for flood control and navigation; development of port and harbor facilities and structures; de-

sign and layout of pipeline facilities and belt lines. The material in the book has been developed in classroom use over the past decade and has been tried and tested in actual classroom work for four courses during the past two years in the civil engineering department of the University of Washington. The book is divided into six parts: roads and pavements; airport engineering; railroad engineering; river and coastal engineering; pipeline transportation; and belt conveyors.

•

RAILROADING IN EIGHTEEN COUNTRIES, by Major General Carl R. Gray, Jr., Rtd. 351 pages, illustrations, maps. Charles Scribner's Sons, 597 Fifth ave., New York 17. $5.

This is the story of the Military Railway Service of the United States Army from its beginning in 1862, including a brief account of the Service in World War I. It is specifically the story of military use of railroads in World War II and in Korea. General Gray has focused his comprehensive account on the performance of the personnel of the Service, and on outstanding individuals wherever possible. Of more than 351,000 men and women employees of American railroads serving in all arms in World War 11, 43,500 were assigned to various units of the Military Railway Service. This impressive record of their achievements covers history, organization, training and operations in Alaska, England, North Africa, Sicily and Italy, northern France and Belgium, southern France, Germany and Austria, Iran, India, the Philippines, New Caledonia, Australia, Japan and Korea. The book contains many fine photographs.

When World War II began, General Gray was executive vice-president of the Chicago, St. Paul, Minneapolis & Omaha. He entered the Military Railway Service in 1942 as a reserve colonel of the United States Corps of Engineers. Appointed a brigadier general and manager of Military Railway Service, he commanded that Service in the Mediterranean Theater of War and eventually became director general of the Service in the European Theater, with the rank of major general of the Service in the European of World War II he was administrator of veterans' affairs.

PERIODICAL ARTICLE

THEY DELIVERED THE GOODS—AND FAST!, by Richard Thruelsen. Saturday Evening Post, Decmeber 3, 1955, pp. 49, et seq. Curtis Publishing Company, Independence Square 5, Philadelphia. Single copies, 15c.

A former associate editor of *Railway Age*, John Emery, is founder and president of Emery Air Freight Corporation, the country's largest forwarder of air cargo and the only organization in its field which operates on a national basis. This article tells how it was founded and describes its operations.

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ADVERTISERS IN THIS ISSUE

B

Bell Co., J. P. 40
Bethlehem Steel Company 1
Agency—Jones & Brakeley, Inc.

C

Caterpillar Tractor Company 6
Agency—N. W. Ayer & Son, Inc.
Classified Advertisements 40

E

Electro-Motive Division, General Motors Corporation .....Front Cover
Agency—The Kudner Agency, Inc.
Exide Industrial Division, Electric Storage Battery Company 13
Agency—Gray & Rogers

G

General Railway Signal Company .....Back Cover
Graybar Electric Co., Inc. 37
Agency—G. M. Basford Company

I

Iron & Steel Products, Inc. 40

J

Jackson Vibrators, Inc. 16
Agency—Stevens, Inc.

L

LeTourneau-Westinghouse Company 38, 39
Agency—Andrews Agency, Inc.

M

Metropolitan Personnel Agency 40

N

National Malleable & Steel Castings Company ..30, 31
Agency—Palm & Patterson, Inc.
New York Central Railroad 40

P

Piggy-Back, Inc. .....Inside Front Cover

R

Railway Educational Bureau, The 40

S

Sonken-Galamba Corporation 40
Symington-Gould Corporation, The ..Inside Back Cover
Agency—Ed Wolff & Associates

U

Union Switch & Signal Division of Westinghouse Air Brake Company 2
Agency—Batten, Barton, Durstine & Osborn, Inc.

W

Westinghouse Air Brake Company 4
Agency—Batten, Barton, Durstine & Osborn, Inc.

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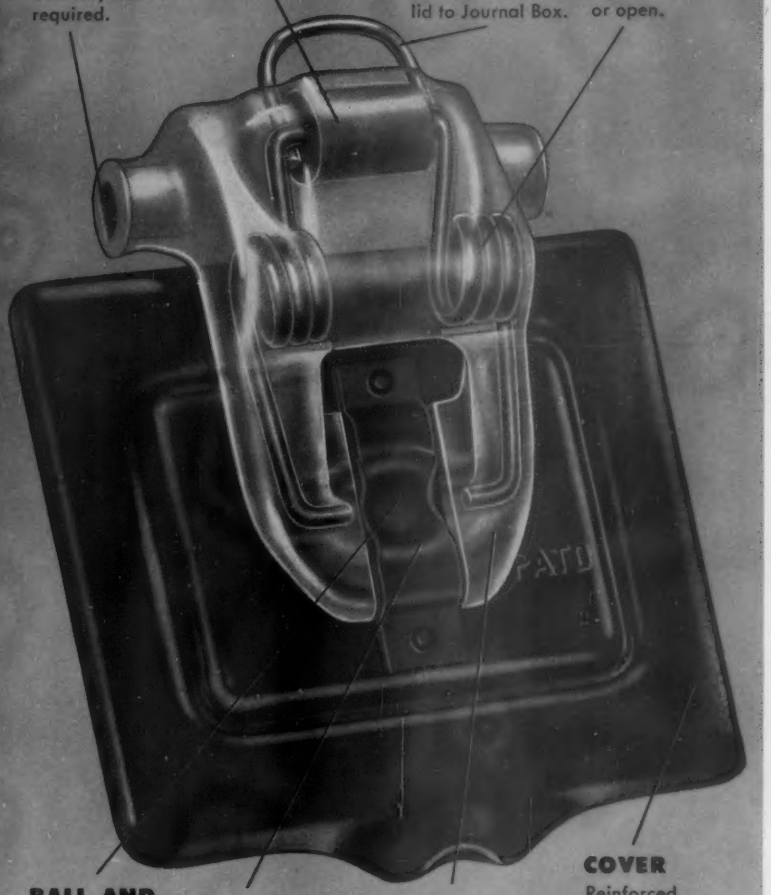
Torsion type, enclosed. Assures tight assembly with lid closed or open.



BALL AND SOCKET JOINT
Full articulation enables lid to adjust itself to variations of hinge lug hole or box face.

BRIDGE
Connects housing and cover. Securely welded in place.

HOUSING
MALLEABLE IRON CASTING with ample hinge pin bearing area.

COVER
Reinforced pressing, flanged four sides. Provides rigidity and tight fit against journal box face.

Easy to Apply . . . No Tools Required

1. Place in horizontal position over hinge lug

2. Insert pin

3. Partially close lid until hairpin is free. Then remove hairpin and close lid all the way. If necessary to remove lid, open to position (3) to insert hairpin, lift to position (2) to remove hinge pin and lift off lid.

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B

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Bethlehem Steel Company 1
Agency—Jones & Brakeley, Inc.

C

Caterpillar Tractor Company 6
Agency—N. W. Ayer & Son, Inc.
Classified Advertisements 40

E

Electro-Motive Division, General Motors Corporation .....Front Cover
Agency—The Kudner Agency, Inc.
Exide Industrial Division, Electric Storage Battery Company 13
Agency—Gray & Rogers

G

General Railway Signal Company .....Back Cover
Graybar Electric Co., Inc. 37
Agency—G. M. Basford Company

I

Iron & Steel Products, Inc. 40

J

Jackson Vibrators, Inc. 16
Agency—Stevens, Inc.

L

LeTourneau-Westinghouse Company 38, 39
Agency—Andrews Agency, Inc.

M

Metropolitan Personnel Agency 40

N

National Malleable & Steel Castings Company ..30, 31
Agency—Palm & Patterson, Inc.
New York Central Railroad 40

P

Piggy-Back, Inc. .....Inside Front Cover

R

Railway Educational Bureau, The 40

S

Sonken-Galamba Corporation 40
Symington-Gould Corporation, The ..Inside Back Cover
Agency—Ed Wolff & Associates

U

Union Switch & Signal Division of Westinghouse Air Brake Company 2
Agency—Batten, Barton, Durstine & Osborn, Inc.

W

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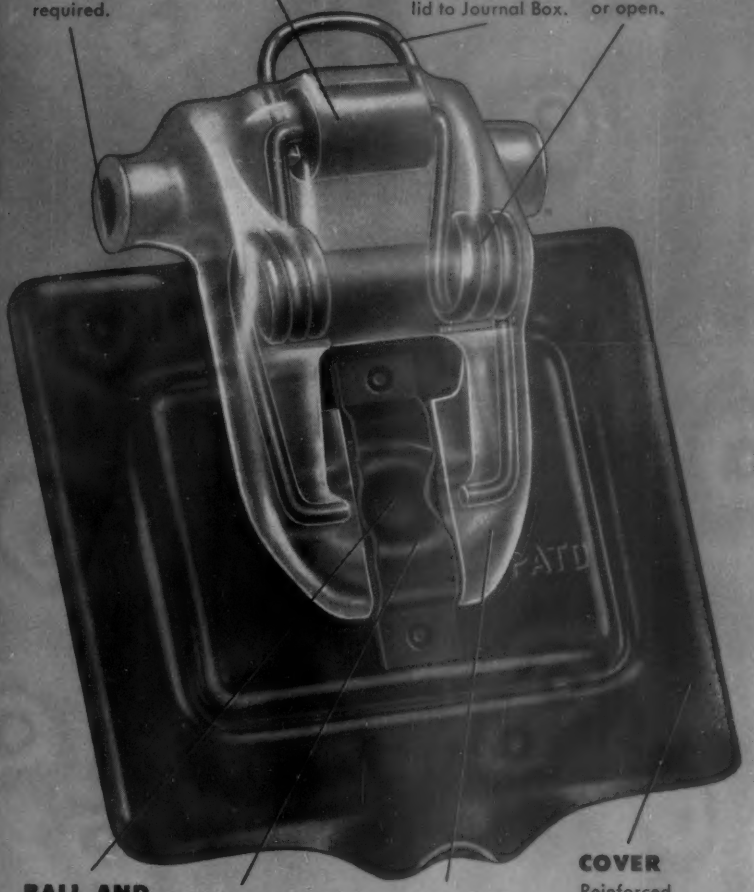

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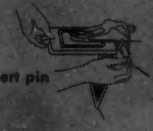

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A Rose

A rose by any other name may smell as sweet, but that does not make everything roses.

"Automation," a brave new word, has captured the imagination of the American public. Now every novel arrangement of controls—and a lot of old ones—is enthusiastically heralded as "automation." A like fate has already blurred words like "electronic," "atomic," and "nuclear." These words, once precise and scientific, have been loose talked into a vague shadow land of confused meanings.

Here at G-R-S we use the word "automation" only as it meets this definition:

"A system in which one or more variable inputs are sensed and reported to a central agency where these inputs are evaluated. The resultant outputs are employed to exercise control, or to present information in some usable form, *without human intervention.* Reasoning is not required, because man has already thought out the choices and has built them into the system."

Remote control, whether of switches and signals or of locomotives, is not automation. Valuable though it is, remote control is only a facility to extend the reach of a human operator, just as pushing a button in Washington can light a Christmas tree in Times Square—or can call a secretary from the next room.

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